EPA REGISTRATION NUMBER 66330-57 – VOL. 1

Fee for Service

This package includes the following	for Division
X New Registration	X RD
Amendment	AD
Waiver Request	BPPD
Voluntary Payment Request	

Receipt Nos. S- 771561

Product/Risk Manager: 21

EPA File Symbol/Reg. No. 66330-LT

Pin-Punch Date: 12/8/04

Action Code:

Requested: 131

Granted: 101.4 Amount due: $ 4000

VolPay Reduction:

Original Decision #:

___%

D-

Parent/Child Decisions:

Parent 66330-UU

Reviewer: Linda Date: 1/5/05

Remarks:

link to D-219256-66330-UU

Please read instructions on reverse before completing form. Form Approved. OMB No. 2070-0060, Approval expires 2-28-95

United States
Environmental Protection Agency
Washington, DC 20460

- [✓] **Registration**
- [ ] **Amendment**
- [ ] **Other**

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
66330- LT	Mary Waller	[ ] None [✓] Restricted
4. Company/Product (Name)	**PM#**	
MIDAS 50:50	21	

5. Name and Address of Applicant *(Include ZIP Code)*
ARVESTA Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
[ ] *Check if this is a new address*

6. Expedited Reveiw. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. _____
Product Name _____

Section - II

- [ ] Amendment - Explain below.
- [ ] Resubmission in response to Agency letter dated _____
- [ ] *Notification - Explain below.*
- [ ] Final printed labels in repsonse to Agency letter dated _____
- [ ] "Me Too" Application.
- [✓] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)
Submission of new formulated product containing 50% iodomethane and 50% chloropicrin.

PRIA category R31: *New product; non-fast track*

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes [✓] No	[ ] Yes [✓] No	[ ] Yes [✓] No	[✓] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify) _____
***Certification must be submitted**	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[✓] Label [ ] Container	25, 110 and 400 gallons	[✓]

6. Manner in Which Label is Affixed to Product: [ ] Lithograph [✓] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Laurent C. Mézin, Ph.D.	Project Manager	(415) 778 4844

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowlingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature	3. Title	6. Date Application Received
Laurent C. Mézin	Project Manager	(Stamped)
4. Typed Name	**5. Date**	
Laurent C. Mézin	December 03, 2004	

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 13, 2004

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

ARVESTA CORPORATION
100 FIRST STREET, SUITE 1700
SAN FRANCISCO, CA 94105

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your submittal of 08-DEC-04. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your data submittal was found to be partially in compliance with the standards for submission of data contained in PR Notice 86-5, with the exceptions noted below. A copy of your transmittal bibliography is enclosed, annotated with the Master Record ID's (MRIDs) assigned to each document accepted. Please use these numbers in all future references to these documents.

If deficiencies were found which apply to individual accepted studies, they are listed below following the applicable MRID. Any document which has been assigned a MRID has been accepted under PR Notice 86-5. If any comments related to a MRID appear on this report, they are provided for your information and reference when preparing future submissions. Some individual documents were not acceptable, and all copies are being returned to you for correction for the reasons indicated below.

These rejected studies have been assigned separate identification numbers which are annotated on both the enclosed bibliography and the rejected document labels.

The rejected studies and their deficiencies are described below.

Rejected Study [01]:

* A statement of compliance or non-compliance with the Good Laboratory Practices Standards contained in 40CFR160 is required for all studies (except rangefinding studies and supplements to previously submittedstudies) submitted to EPA. This statement must appearas page 3 of all studies, and must be signed and dated by the study sponsor, the study submitter, and the study director. Please see 40 CFR 160.12 for specific guidance.

464227-00

Arvesta

December 03, 2004

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9885
www.arvesta.com

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: Midas 50:50 (EPA Reg. No. 66330-??)
Submission for registration of new formulation
Waiver and rationale for waiver of acute toxicology studies

Dear Ms Waller:

Included with this cover letter is a submission for the registration of a new end-use product, MIDAS 50:50. MIDAS 50:50 contains the currently registered active ingredient **chloropicrin** (50.0 %) and an active ingredient, **iodomethane technical**, currently under review (50%). All uses of this new formulation are already common to those of the previously submitted products. There are no food uses.

With respect to PRIA and the fee associated with this submission, we believe the appropriate review/fee category is as follows:

R31: New product; non fast track; Fee: $4,000.00

The following data and documents are enclosed:

Volume 1. Administrative Volume.

1. The present cover letter;
2. EPA Form 8570-1: Application for Registration;
3. EPA Form 8570-4: Confidential Statement of Formula;
4. **Midas 50:50** Proposed Label (5 copies);
5. EPA Form 8570-34: Certification with Respect to Citation of Data;
6. EPA Data Matrix; and
7. Transmittal document.

The following volumes are submitted in triplicate:

Volume 98: U.S. EPA Product Properties Test Guidelines - Group A and B of TM-4250? MIDAS 50:50.

Volume 99. Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge.

Waiver request overview:

EPA is currently reviewing the submissions for registration of two iodomethane end-use products, MIDAS 98:2 containing 98% iodomethane and 2% chloropicrin as a warning agent, and MIDAS 25:75, containing 25% iodomethane and 75% chloropicrin. Iodomethane is a new active ingredient while chloropicrin is currently registered by the agency. In previous discussions with EPA, Arvesta Corporation has discussed the viability of using the results of acute toxicity data from the two iodomethane end-use formulations currently under review, to "bridge" the acute toxicity data requirements for registration of additional iodomethane end-use formulations containing intermediate proportions of both active ingredients. In these discussions, the agency agreed, in principle, that the requirements for new acute toxicity data for the formulations could be waived if the precautionary statements for these new formulations were based on the most severe results from the acute toxicity studies that have been performed on the previously submitted product formulation.
Arvesta Corporation herein submits a request to have these requirements waived and includes a full rationale to support the request, consistent with our understanding with the agency.

Should you have any questions, please contact me at (415) 778 4844.

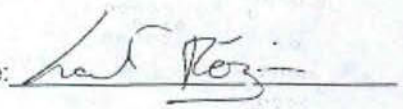
Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

TRANSMITTAL DOCUMENT FOR:
APPLICATION FOR REGISTRATION OF **MIDAS 50:50**
EPA File No. 66330-??
Submission of a new formulated product
December 03, 2004 -- Page 1 of 1

Data Submitter:
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

Attn: Laurent C. Mézin, Ph.D.
Tel: (415) 778 4844

Signature: 

Document	Volume No.	Test Subs.	MRID No.
ADMINISTRATIVE VOLUME			
Cover letter		n/a	
Transmittal Document		n/a	
VOLUME 99			
U.S. EPA Product Properties Test Guidelines - Group A and B of TM-42502 MIDAS 50:50	98	EUP	**Reject (01)**
VOLUME 100			
Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge	99	EUP	**46422702**

The following volumes are submitted in triplicate:

Volume 98: U.S. EPA Product Properties Test Guidelines - Group A and B of TM-4250? MIDAS 50:50.

Volume 99. Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge.

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Arvesta Corporation herein submits a request to have these requirements waived and includes a full rationale to support the request, consistent with our understanding with the agency.

Should you have any questions, please contact me at (415) 778 4844.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Date: 1/11/2005

Dr. Laurent C. Mezin
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

JAN 1 1 2004

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Subject: EPA Reg. No.66330-LT
Midas 50:50

Dear Dr.Mezin:

Please find attached a copy of the Report of Analysis for Compliance with PR Notice 86-5. Your data have been assigned the Master Record Identification (MRID) numbers listed on the attached pages.

For those volumes which failed the PR Notice 86-5 screen please correct the deficiencies and resubmit the volumes to the Agency **within 2 to 3 days**. Include the following Decision Number on the cover page with the word "Resubmission" to identify the data.

Decision # D352492
Resubmission

If you cannot meet this time frame, please contact me to discuss the date on which you expect to return the corrected data. You may contact me at (703) 308-9353 to discuss your submission deficiencies. My fax number is (703) 308-1825.

Sincerely,

Summer Gardner-Jenkins

Summer Gardner-Jenkins
Screening Team
Fungicide Branch
Registration Division (7505C)

Attachment

Date Branch Rec'd 12/15/04 Fax No. (415)284-9883 Contact: Dr. Mezin

Arvesta

100 First Street, Suite 1700
San Francisco, CA 94105
Phone (415) 536-3480
Fax (415) 284-9884

FACSIMILE TRANSMISSION

TO:		FROM:	
	U.S. EPA	**Name:**	Laurent Mézin
Attention:	**Summer Gardner-Jenkins**	**cc:**	
Fax#:	703 308 1825		
Number of pages (including cover): 4		**Date:**	Jan. 14, 2005

Resubmission: EPA Reg. # 66330-LT
Iodomethane updated GLP pages – Decision # D352492

Dear Summer:

Please find attached the three updated GLP statement pages for the study below. I am sending them in order of appearance in the report for pages 3 of the main report, the product identity section and the physical/chemical properties section.

U.S. EPA Product Properties Test Guidelines –
Group A and B of TM-42502 MIDAS 50:50

Thank you very much for giving me the opportunity to forward these pages to you directly. I appreciate your help and flexibility in this regard!

Please do not hesitate to contact me should you have any questions.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

JAN 19 2005

JAN 19 2004

This package of rejected data

has been **corrected**.

Please resubmit through

86-5 screen for MRID Nos.

Thank you,
Fungicide Branch

Susan

464489-00

Arvesta

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9689
www.arvesta.com

December 03, 2004

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: **Mary Waller**
Product Manager 21
(703) 308 9354

RE: Midas 50:50 (EPA Reg. No. 66330-??)
Submission for registration of new formulation
Waiver and rationale for waiver of acute toxicology studies

Dear Ms Waller:

Included with this cover letter is a submission for the registration of a new end-use product, MIDAS 50:50. MIDAS 50:50 contains the currently registered active ingredient **chloropicrin** (50.0 %) and an active ingredient, **iodomethane technical**, currently under review (50%). All uses of this new formulation are already common to those of the previously submitted products. There are no food uses.

With respect to PRIA and the fee associated with this submission, we believe the appropriate review/fee category is as follows:

R31: New product; non fast track; Fee: $4,000.00

The following data and documents are enclosed:

Volume 1. Administrative Volume.

1. The present cover letter;
2. EPA Form 8570-1: Application for Registration;
3. EPA Form 8570-4: Confidential Statement of Formula;
4. **Midas 50:50** Proposed Label (5 copies);
5. EPA Form 8570-34: Certification with Respect to Citation of Data;
6. EPA Data Matrix; and
7. Transmittal document.

DP #: (312609)

Decision #: **352492**

DATA PACKAGE BEAN SHEET

Date: 16-Mar-2005

* * * Registration Information * * *

Registration: 66330-LT - MIDAS 50:50

Company: 66330 - ARVESTA CORPORATION

Risk Manager: RM 21 - Mary Waller - (703) 308-9354 Room# CM-2 249

Risk Manager Reviewer: Dennis McNeilly DMCNEILL

Sent Date: 21-Jan-2005 Calculated Due Date: Edited Due Date:

Type of Registration: Product Registration - Section 3

Action Desc: (R01) NEW AI;FOOD USE;

Ingredients: 081501, Chloropicrin(50%)

000011, Methane, iodo-(50%)

* * * Data Package Information * * *

Expedite: ○ Yes ● No Date Sent: 31-Jan-2005 Due Back:

DP Ingredient: 000011, Methane, iodo-

081501, Chloropicrin

DP Title: Product chemistry

CSF Included: ● Yes ○ No Label Included: ● Yes ○ No Parent DP #:

Assigned To		Date In	Date Out		
Organization:	RD / TRB	07-Feb-2005		Administrative Due Date:	17-Nov-2007
Team Name:	CHEM			Negotiated Due Date:	29-Dec-2005
Reviewer Name:				Projected Completion Date:	
Contractor Name:					

* * * Studies Sent for Review * * *

Printed on Page 2

* * * Additional Data Package for this Decision * * *

Printed on Page 3

* * * Data Package Instructions * * *

Please review the attached vol. of product chemistry data. This is a new product with two ai's. One is a new ai not yet registered.

DP#: (312609) *** Studies Sent for Review *** Decision#: (352492)

MRID	Citation Reference	Guideline
46448901	Cornes, S. (2004) U.S. EPA Product Properties Test Guidelines- Group A and B of TM-42502 Midas 50:50. Project Number: TMN/0378, 02J0055, 02J0040. Unpublished study prepared by Toxikon Environmental Sciences. 51 p.	830.1550/Product Identity and cor
46448901	Cornes, S. (2004) U.S. EPA Product Properties Test Guidelines- Group A and B of TM-42502 Midas 50:50. Project Number: TMN/0378, 02J0055, 02J0040. Unpublished study prepared by Toxikon Environmental Sciences. 51 p.	830.1600/Description of materials
46448901	Cornes, S. (2004) U.S. EPA Product Properties Test Guidelines- Group A and B of TM-42502 Midas 50:50. Project Number: TMN/0378, 02J0055, 02J0040. Unpublished study prepared by Toxikon Environmental Sciences. 51 p.	830.1620/Description of productio
46448901	Cornes, S. (2004) U.S. EPA Product Properties Test Guidelines- Group A and B of TM-42502 Midas 50:50. Project Number: TMN/0378, 02J0055, 02J0040. Unpublished study prepared by Toxikon Environmental Sciences. 51 p.	830.1650/Description of formulatic
46448901	Cornes, S. (2004) U.S. EPA Product Properties Test Guidelines- Group A and B of TM-42502 Midas 50:50. Project Number: TMN/0378, 02J0055, 02J0040. Unpublished study prepared by Toxikon Environmental Sciences. 51 p.	830.1670/Discussion of formation
46448901	Cornes, S. (2004) U.S. EPA Product Properties Test Guidelines- Group A and B of TM-42502 Midas 50:50. Project Number: TMN/0378, 02J0055, 02J0040. Unpublished study prepared by Toxikon Environmental Sciences. 51 p.	830.1700/Preliminary analysis
46448901	Cornes, S. (2004) U.S. EPA Product Properties Test Guidelines- Group A and B of TM-42502 Midas 50:50. Project Number: TMN/0378, 02J0055, 02J0040. Unpublished study prepared by Toxikon Environmental Sciences. 51 p.	830.1750/Certified limits
46448901	Cornes, S. (2004) U.S. EPA Product Properties Test Guidelines- Group A and B of TM-42502 Midas 50:50. Project Number: TMN/0378, 02J0055, 02J0040. Unpublished study prepared by Toxikon Environmental Sciences. 51 p.	830.1800/Enforcement analytical r

DP#: (312609) *** [redacted]ional Data Package for this Decision *** [redacted] Decision#: (352492)

DP #	Division/Branch	Date Sent	Date Due	Instructions?	CSF	label
312611	RD / TRB	31-Jan-2005	29-Dec-2005	○ Yes ○ No	● Yes ○ No	● Yes ○ No
312611	RD / FB	31-Jan-2005	29-Dec-2005	○ Yes ○ No	● Yes ○ No	● Yes ○ No

· Product chemistry

46448 9-01

S781701

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

JUL 22 2005

Laurent C. Mézin
Project Manager
Arysta LifeScience North America
100 First Street, Suite 1700
San Francisco, CA 94105

Subject: Midas 50:50
EPA File Symbol No. 66330-LT
Revised CSF submitted 6/18/05

Dear Dr. Mézin:

The revised basic Confidential Statement of Formula (CSF) dated 6/18/05 referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended is acceptable. Please note that this CSF supercedes all previous CSFs for this product and will be added to the regulatory file.

If you have any questions, please contact Robert Westin by phone at (703) 305-5721 or via email at westin.robert@epa.gov.

Sincerely,

Mary L. Waller

Mary L. Waller
Product Manager (21)
Fungicide Branch
Registration Division (7505C)

Arvesta

June 27, 2005

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9883
www.arvesta.com

Bob: According to Dennis, the last TRB review requested changes to the CSF for cert. limits. Please verify cert. limits or send to TRB. Thanks. Mary

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: IODOMETHANE (EPA Reg. No. 66330-UU) formulated products
Submission of Updated CSFs for the MIDAS formulations

Dear Ms Waller:

Included with this cover letter are updated CSFs for Iodomethane formulated products. This follows conversations I have had with Dennis McNeilly regarding this issue. CSFs are enclosed for the following products:

1. MIDAS 98:2 (EPA File No. 66330-UG) S781697
2. MIDAS 25:75 (EPA File No. 66330-UE) S781698
3. MIDAS 33:67 (EPA File No. 66330-LO) S781700
4. MIDAS 50:50 (EPA File No. 66330-LT) S781701
5. MIDAS EC BRONZE (EPA File No. 66330-LI) S781704
6. MIDAS EC GOLD (EPA File No. 66330-AN) S781706

Should you have any questions, please contact me at (415) 778 4844.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

MAY 20 2005

Mr. Laurent C. Mezin
Avesta Corp.
100 First Street, Suite 1700
San Francisco, CA 94105

Subject: Midas 50:50
EPA File Symbol: 66330-LT
Product Chemistry

Dear Mr. Mezin:

The Agency is forwarding a review of the product chemistry data supporting this registration (MRID 464489-01). This letter does not constitute approval of the product. The Agency simply wants to advise you of the status of the product chemistry review. For detailed information see the enclosed review by Linda L. Kutney dated 5/11/2005. Please note Conclusion 2 in the enclosed review.

Sincerely,

for

Mary L. Waller
Product Manager (21)
Fungicide Branch
Registration Division (7505C)

Enclosure: product chemistry review

FEE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OPPTS/OPP/RD/TRB/PRODUCT CHEMISTRY TEAM

WASHINGTON, D.C. 20460

DATE OUT: May 11, 2005

SUBJECT: Product Chemistry Review of Midas 50:50
Barcode #:312609 Decision #:352492 Reg No:66330-LT
PC Code(s):081501,000011 Food Use:Yes

FROM: Linda L. Kutney, Chemist Linda L Kutney 5/11/05
Product Chemistry Team
Technical Review Branch/RD (7505C)

TO: Mary Waller, Dennis McNeilly RM-21
Fungicide Branch/ RD (7505C)

INTRODUCTION:

The Arvesta Corporation has submitted product chemistry data, a proposed label and a basic CSF (dated 12/3/04) for the new product, Midas 50:50, having a label claim of 50.00% Iodomethane and 50.00% Chloropicrin. Midas 50:50 is to be used on food crops. Data were submitted under MRID 46448901 and 45594202.

SUMMARY OF FINDINGS:

1. The physical or chemical hazards and storage and disposal statements on the label are acceptable.

TRB CONCLUSIONS:

1. Registration of this new product is dependent on registration of the unregistered source of iodomethane.

2. If the purity of the unregistered iodomethane source ai is not 100%, then the appropriate adjustment of the proposed CSF must be made.

3. Storage Stability testing, Guideline 830.6317, is required to be conducted after 0,3,6,9, and 12 months of storage under warehouse conditions, and submitted to EPA upon its completion.

4. Corrosion Characteristics testing, Guideline 830.6320, is required after 0,3,6,9, and 12 months of storage under warehouse conditions, and submitted to EPA upon its completion.

PRODUCT CHEMISTRY DATA (SERIES 830 Subgroup A & Subgroup B)

Subgroup A, Data Guideline Requirement 830.--	Data Satisfied?	MRID No.
1550.Chemical Identity(CSF)	Yes	CSF
1600. Beginning Materials	Yes	46448901
1650. Formulation Process	Yes	46448901
1670. Discussion of Impurities	Yes	46448901
1750. Certified Limits(CSF)	Yes, slight variation from certified limits of 40CFR180.175 were requested and granted.	46448901

1800 Enforcement Analytical Method	Yes, submitted previously, 'Analysis of Iodomethane and Chloropicrin in Two Formulations' which uses an Agilent 6890 GC with FID at 260C, DB-624 GC Column using a 30 m x 0.53 mm ID, 3.0 micron film thickness or equivalent and a Chlorobenzene Internal Standard. The carrier gas is Helium at about 4 ml/min, temp 35C (10 min) to 5C/min to 135C (1 min hold), then 10C/min to 260C (1.5 min hold). Injection Vol is 1 microliter, runtime is 45 min, retention times about: Iodomethane 5.2 min Chloropicrin 19.9 min Chlorobenzene 23 min	46448901 45594202

Subgroup B, Guideline 830.- Data Requirement:	Data OK ?	Description	MRID No.
6302 Color	Yes	Clear	46448901
6303 Physical State	Yes	Liquid	46448901
6304 Odor	Yes	NA Product an inhalation hazard & contains a warning agent.	46448901

6314 Oxidation/Reduction	Yes	Does not appear to react with water, granular zinc, monoammonium phosphate or household bleach.	46448901
6315 Flammability/Flame Extension	Yes	NA Not combustible.	46448901
6316 Explodability	Yes	Not reported to contain explosive components.	46448901
6317 Storage Stability	NO	Reportedly stable for 1 year at 25C. Data are still required following 0,3,6,9 and 12 months of warehouse storage.	46448901
6319 Miscibility	Yes	NA. Not mixed with petroleum solvents.	46448901
6320 Corrosion Characteristics	NO	Not reportedly corrosive to recommended packaging. Data are still required following 0,3,6,9 and 12 months of warehouse storage.	46448901
6321 Dielectric Breakdown Voltage	Yes	NA Not used around electrical equipment.	46448901
7000 pH	Yes	5.5 @ 30.7 C in 1% w/v water emulsion	46448901
7100 Viscosity	Yes	0.766 cP @ 22.5 C	46448901

7300. Density/Bulk Density	Yes	15.9 lb/ft3 (1.91 g/ml) @ 22.5 C	46448901

Explanations: NA = Not Applicable

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

ARVESTA Corporation
100 First Street
Suite 1700
San Francisco, CA 94105

MAR 7 2005

Subject: Midas 50:50, waiver request
EPA File Symbol No.: 66330-LT
Submission dated 12/3/2004

Dear Dr. Mezin:

The Agency has reviewed your request to waive submission of the acute toxicity studies (six-pack) for registration of this pending product. As pointed out in your waiver request acute toxicity studies (six-pack studies) have already been submitted for two similar products with similar formulations, i.e., MIDAS 98:2 and MIDAS 25:75 and the data for these submissions could be used as surrogate/bridging data to evaluate this pending product. The Agency agrees with the discussion included in your waiver request and grants this waiver request. The Agency will use the acute toxicity profile as discussed in Breann Hanson's review dated Feb 15, 2005 to evaluate the products signal word, precautionary label and other labeling issues.

This letter does not constitute registration of this product. It informs you of progress in the review of this pending product. If you have questions, please contact Dennis McNeilly at (703) 308-6742 or electronically at mcneilly.dennis@epa.gov.

Sincerely,

/S/

Mary L. Waller
Product Manager (21)
Fungicide Branch
Registration Division (7505C)

Enclosure: Acute Toxicity Waiver Request (Feb 15, 2004, Breann Hanson)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

February 15, 2005

MEMORANDUM

Subject:	EPA File Symbol:	66330-LT	MIDAS™ 50:50
	DP Barcode:	D312611	
	Decision No:	352492	
	PC Codes:	000011	Iodomethane
		081501	Chloropicrin

From: Breann Hanson, Toxicologist
Technical Review Branch
Registration Division (7505C)

To: Dennis McNeilly, RM Team 21
Fungicide Branch
Registration Division (7505C)

Applicant: Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

FORMULATION FROM LABEL:

Active Ingredients:			% by wt.
000011	Iodomethane	CAS No. 74-88-4	50.00%
081501	Chloropicrin	CAS No. 76-06-2	50.00%
		Total:	100.00%

ACTION REQUESTED:

The Product Manager requests:

> "The registrant has submitted a waiver request for the acute tox-six pack. Please evaluate the waiver request, and make a recommendation, as well as advise us on appropriate precautionary labeling (if we accept the waiver)."

BACKGROUND

Arvesta Corporation has submitted a new end-use product registration request for MIDAS™ 50:50, EPA File Symbol 66330-LT. The product contains Iodomethane and Chloropicrin at concentrations of 50%. The company is requesting a waiver of acute toxicity studies based on the fact that two products have already been registered which contain both ingredients; MIDAS™ 98:2, EPA Reg. No. 66330-43, containing 98% Idomethane and 2% Chloropicrin, and MIDAS™ 25:75, EPA Reg. No. 66330-42, containing 25% Iodomethane and 75% Chloropicrin. Both products have toxicity categories of I and are dermal sensitizers. The acute oral and dermal toxicity, eye irritation, dermal irritation and dermal sensitization studies (MRIDs 455942-04 through -08) for MIDAS™ 98:2, EPA Reg. No. 66330-43, were previously reviewed in a TRB memo (Hashim, EPA File Symbol: 66330-UG, D282272, Case No. 071529, 17/JUNE/2002). The acute inhalation toxicity study (MRID 45641301) was reviewed in another TRB memo (Backus, EPA File Symbol: 66330-UG, D282078, Case No. 071529, 18/JUNE/2002). The acute oral, dermal and inhalation toxicity, dermal irritation and dermal sensitization studies (MRIDs 456412-01 through -05) for MIDAS™ 98:2, EPA Reg. No. 66330-42, were previously reviewed in a TRB memo (Hashim, EPA File Symbol: 66330-UE, D282076, Case No. 071525, 20/JUNE/2002). The eye irritation study (45594206) was cited from MIDAS™ 98:2, EPA Reg. No. 66330-43.

MIDAS™ 50:50, EPA File Symbol 66330-LT, being a product consisting of 50% of both active ingredients, is lower in concentration than MIDAS™ 98:2 for Iodomethane and lower in concentration than MIDAS™ 25:75 for Chloropicrin.

The submission included a label, application and waiver request (MRID 46422702).

RECOMMENDATIONS:

TRB concurs with the Registrant's bridging argument and recommends for registration, from the acute toxicity viewpoint, of this new end-use product. There is not expected to be any synergism or potentiation of toxicity due to the lower percentages of AI's in the proposed product. The proposed product will have the most restrictive profile based on the toxicity profiles of the two registered pesticide products.

TABLE 1: Toxicity Categories for MIDAS™ 50:50, EPA File Symbol 66330-LT and the Two Single AI End-Use Products, EPA Reg. No. 66330-43, and EPA Reg. No. 66330-42

PRODUCT	MIDAS™ 98:2, EPA Reg. No. 66330-43	MIDAS™ 25:75, EPA Reg. No. 66330-42	**MIDAS™ 50:50, EPA File Symbol 66330-LT**
% Active Ingredient	98% Iodomethane and 2% Chloropicrin	25% Iodomethane and 75% Chloropicrin	**50% Iodomethane and 50% Chloropicrin**
Acute Oral Toxicity	LD_{50}= 117 mg/kg II MRID 45594204	LD_{50}= 77 mg/kg (females) II MRID 45641201	**Toxicity Category II**
Acute Dermal Toxicity	LD_{50}> 2000 mg/kg III MRID 45594205	LD_{50}> 2000 mg/kg III MRID 45641202	**Toxicity Category III**
Acute Inhalation Toxicity	LC_{50}= 3.60 mg/L IV MRID 00149339	LC_{50}= 0.21 mg/L II MRID 45641203	**Toxicity Category II**
Primary Eye Irritation	I MRID 45594206	I MRID 45594206	**Toxicity Category I**
Primary Dermal Irritation	II MRID 45594207	I MRID 45641204	**Toxicity Category I**
Dermal Sensitization	IS A SENSITIZER MRID 45594208	IS A SENSITIZER MRID 45641205	**IS A SENSITIZER**

LABELING:

PRODUCT ID #: **066330-00057**

PRODUCT NAME: MIDAS™ 50:50

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals:

SIGNAL WORD: DANGER

SPANISH SIGNAL WORD: PELIGRO
Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

Restricted Use Pesticide due to toxicity categories. For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Corrosive. Causes skin burns and irreversible eye damage. May be fatal if inhaled or if swallowed. Harmful if absorbed through skin. Do not breathe spray mist. Do not get in eyes, on skin, or on clothing. Wear coveralls worn over long-sleeved shirt and long pants, socks, chemical-resistant footwear, and chemical-resistant gloves (such as Barrier Laminate, Nitrile Rubber, Neoprene Rubber, Viton, Selection Category E). Wear protective eyewear (goggles, face shield, or safety glasses). For handling activities, use a respirator with an organic-vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSAH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G), or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N, P, R or HE prefilter. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. When mixing and loading wear a chemical resistant apron.

USER SAFETY RECOMMENDATIONS:

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

First Aid:

If on skin:
-Take off contaminated clothing.
-Rinse skin immediately with plenty of water for 15-20 minutes.
-Call a poison control center or doctor for treatment advice.

If in eyes:
-Hold eye open and rinse slowly and gently with water for 15-20 minutes.
-Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
-Call a poison control center or doctor for treatment advice.

If inhaled:
-Move the person to fresh air.
-If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
-Call a poison control center or doctor for further treatment advice.

If swallowed:
-Call a poison control center or doctor immediately for treatment advice.
-Have person sip a glass of water if able to swallow.
-Do not induce vomiting unless told to by a poison control center or doctor.
-Do not give anything to an unconscious person.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

Fee for Service

This package includes the following	for Division
X New Registration	X RD
Amendment	AD
Waiver Request	BPPD
Voluntary Payment Request	

Receipt Nos. S- 771561

Product/Risk Manager: 21

EPA File Symbol/Reg. No. 66330-LT

Pin-Punch Date: 12/8/04

Action Code:

Requested: 131

Granted: 101.4 Amount due: $ 4000

VolPay Reduction:

Original Decision #:

___%

D-

Parent/Child Decisions:

Parent 66330-LL 231

Reviewer: Linda Date: 1/5/05

Remarks:

link to D-219256-66330-LL

Please read instructions on rererse before completing form. Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☑ **Registration**
☐ **Amendment**
☐ **Other**

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
66330- LT	Mary Waller	☐ None ☑ Restricted
4. Company/Product (Name)	**PM#**	
MIDAS 50:50	21	

5. Name and Address of Applicant *(Include ZIP Code)*
ARVESTA Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
☐ *Check if this is a new address*

6. Expedited Reveiw. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. _____
Product Name _____

Section - II

☐ Amendment - Explain below.
☐ Resubmission in response to Agency letter dated _____
☐ Notification - Explain below.
☐ Final printed labels in repsonse to Agency letter dated _____
☐ "Me Too" Application.
☑ Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Submission of new formulated product containing 50% iodomethane and 50% chloropicrin.

PRIA category R31: New product; non-fast track

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	☑ Metal ☐ Plastic ☐ Glass ☐ Paper ☐ Other (Specify) _____
** Certification must be submitted*	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☑ Label ☐ Container	25, 110 and 400 gallons	☑

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☑ Paper glued ☐ Stenciled ☐ Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Laurent C. Mézin, Ph.D.	Project Manager	(415) 778 4844

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowlingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

2. Signature	3. Title	
Laurent Mézin	Project Manager	
4. Typed Name	**5. Date**	
Laurent C. Mézin	December 03, 2004	

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 13, 2004

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

ARVESTA CORPORATION
100 FIRST STREET, SUITE 1700
SAN FRANCISCO, CA 94105

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your submittal of 08-DEC-04. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your data submittal was found to be partially in compliance with the standards for submission of data contained in PR Notice 86-5, with the exceptions noted below. A copy of your transmittal bibliography is enclosed, annotated with the Master Record ID's (MRIDs) assigned to each document accepted. Please use these numbers in all future references to these documents.

If deficiencies were found which apply to individual accepted studies, they are listed below following the applicable MRID. Any document which has been assigned a MRID has been accepted under PR Notice 86-5. If any comments related to a MRID appear on this report, they are provided for your information and reference when preparing future submissions. Some individual documents were not acceptable, and all copies are being returned to you for correction for the reasons indicated below.

These rejected studies have been assigned separate identification numbers which are annotated on both the enclosed bibliography and the rejected document labels.

The rejected studies and their deficiencies are described below.

Rejected Study [01]:

* A statement of compliance or non-compliance with the Good Laboratory Practices Standards contained in 40CFR160 is required for all studies (except rangefinding studies and supplements to previously submittedstudies) submitted to EPA. This statement must appearas page 3 of all studies, and must be signed and dated by the study sponsor, the study submitter, and the study director. Please see 40 CFR 160.12 for specific guidance.

464227-00

Arvesta

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9884
www.arvesta.com

December 03, 2004

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: Midas 50:50 (EPA Reg. No. 66330-??)
Submission for registration of new formulation
Waiver and rationale for waiver of acute toxicology studies

Dear Ms Waller:

Included with this cover letter is a submission for the registration of a new end-use product, MIDAS 50:50. MIDAS 50:50 contains the currently registered active ingredient **chloropicrin** (50.0 %) and an active ingredient, **iodomethane technical**, currently under review (50%). All uses of this new formulation are already common to those of the previously submitted products. There are no food uses.

With respect to PRIA and the fee associated with this submission, we believe the appropriate review/fee category is as follows:

R31: New product; non fast track; Fee: $4,000.00

The following data and documents are enclosed:

Volume 1. Administrative Volume.

1. The present cover letter;
2. EPA Form 8570-1: Application for Registration;
3. EPA Form 8570-4: Confidential Statement of Formula;
4. **Midas 50:50** Proposed Label (5 copies);
5. EPA Form 8570-34: Certification with Respect to Citation of Data;
6. EPA Data Matrix; and
7. Transmittal document.

The following volumes are submitted in triplicate:

Volume 98: U.S. EPA Product Properties Test Guidelines - Group A and B of TM-42502 MIDAS 50:50.

Volume 99. Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge.

Waiver request overview:

EPA is currently reviewing the submissions for registration of two iodomethane end-use products, MIDAS 98:2 containing 98% iodomethane and 2% chloropicrin as a warning agent, and MIDAS 25:75, containing 25% iodomethane and 75% chloropicrin. Iodomethane is a new active ingredient while chloropicrin is currently registered by the agency. In previous discussions with EPA, Arvesta Corporation has discussed the viability of using the results of acute toxicity data from the two iodomethane end-use formulations currently under review, to "bridge" the acute toxicity data requirements for registration of additional iodomethane end-use formulations containing intermediate proportions of both active ingredients. In these discussions, the agency agreed, in principle, that the requirements for new acute toxicity data for the formulations could be waived if the precautionary statements for these new formulations were based on the most severe results from the acute toxicity studies that have been performed on the previously submitted product formulation.
Arvesta Corporation herein submits a request to have these requirements waived and includes a full rationale to support the request, consistent with our understanding with the agency.

Should you have any questions, please contact me at (415) 778 4844.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

TRANSMITTAL DOCUMENT FOR:
APPLICATION FOR REGISTRATION OF **MIDAS 50:50**
EPA File No. 66330-??
Submission of a new formulated product
December 03, 2004 -- Page 1 of 1

Data Submitter:
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

Attn: Laurent C. Mézin, Ph.D.
Tel: (415) 778 4844

Signature:

Document	Volume No.	Test Subs.	MRID No.
ADMINISTRATIVE VOLUME			
Cover letter		n/a	
Transmittal Document		n/a	
VOLUME 99			
U.S. EPA Product Properties Test Guidelines - Group A and B of TM-42502 MIDAS 50:50	98	EUP	**Reject (01)**
VOLUME 100			
Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge	99	EUP	**46422702**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Date: 1/11/2005

Dr. Laurent C. Mezin
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

JAN 1 1 2004

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Subject: EPA Reg. No.66330-LT
Midas 50:50

Dear Dr.Mezin:

Please find attached a copy of the Report of Analysis for Compliance with PR Notice 86-5. Your data have been assigned the Master Record Identification (MRID) numbers listed on the attached pages.

For those volumes which failed the PR Notice 86-5 screen please correct the deficiencies and resubmit the volumes to the Agency **within 2 to 3 days**. Include the following Decision Number on the cover page with the word "Resubmission" to identify the data.

Decision # D352492
Resubmission

If you cannot meet this time frame, please contact me to discuss the date on which you expect to return the corrected data. You may contact me at (703) 308-9353 to discuss your submission deficiencies. My fax number is (703) 308-1825.

Sincerely,

Summer Gardner-Jenkins

Summer Gardner-Jenkins
Screening Team
Fungicide Branch
Registration Division (7505C)

Attachment

Date Branch Rec'd 12/15/04 Fax No. (415)284-9883 Contact: Dr. Mezin

Arvesta

100 First Street, Suite 1700
San Francisco, CA 94105
Phone (415) 536-3480
Fax (415) 284-9884

FACSIMILE TRANSMISSION

TO:		FROM:	
	U.S. EPA	**Name:**	Laurent Mézin
Attention:	**Summer Gardner-Jenkins**	**cc:**	
Fax#:	703 308 1825		
Number of pages (including cover): 4		**Date:**	Jan. 14, 2005

Resubmission: EPA Reg. # 66330-LT
Iodomethane updated GLP pages – Decision # D352492

Dear Summer:

Please find attached the three updated GLP statement pages for the study below. I am sending them in order of appearance in the report for pages 3 of the main report, the product identity section and the physical/chemical properties section.

U.S. EPA Product Properties Test Guidelines –
Group A and B of TM-42502 MIDAS 50:50

Thank you very much for giving me the opportunity to forward these pages to you directly. I appreciate your help and flexibility in this regard!

Please do not hesitate to contact me should you have any questions.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

JAN 19 2005

JAN 19 2004

This package of rejected data

has been **corrected**.

Please resubmit through

86-5 screen for MRID Nos.

Thank you,
Fungicide Branch

Susan

464489-00

Arvesta

Arvesta Corporation
100 First Street, Suite 2700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9884
www.arvesta.com

December 03, 2004

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

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Arvesta Corporation herein submits a request to have these requirements waived and includes a full rationale to support the request, consistent with our understanding with the agency.

Should you have any questions, please contact me at (415) 778 4844.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

DP #: (312611)

Decision #: 352492

DATA PACKAGE BEAN SHEET

Date: 31-Jan-2005

R01
#17710

* * * Registration Information * * *

Registration: 66330-LT - MIDAS 50:50 -57

Company: 66330 - ARVESTA CORPORATION

Risk Manager: RM 21 - Mary Waller - (703) 308-9354 Room# CM-2 249

Risk Manager Reviewer: Dennis McNeilly DMCNEILL

Sent Date: 21-Jan-2005 Calculated Due Date: Edited Due Date:

Type of Registration: Product Registration - Section 3

Action Desc: (R01) NEW AI;FOOD USE;

Ingredients: 081501, Chloropicrin(50%)

000011, Methane, iodo-(50%)

* * * Data Package Information * * *

Expedite: ○ Yes ● No Date Sent: 31-Jan-2005 Due Back:

DP Ingredient: 000011, Methane, iodo-

081501, Chloropicrin

DP Title: Acute tox six pack-waiver request

CSF Included: ● Yes ○ No Label Included: ● Yes ○ No Parent DP #:

Assigned To	Date In	Date Out	
Organization: RD / TRB			Administrative Due Date: 17-Nov-2007
Team Name: TOX			Negotiated Due Date: 6-29-05
Reviewer Name:			Projected Completion Date:
Contractor Name:			

* * * Studies Sent for Review * * *

Printed on Page 2

* * * Additional Data Package for this Decision * * *

Printed on Page 3

* * * Data Package Instructions * * *

The registratnt has submitted a waiver requst for the acute tox -six pack. Please evaluate the waiver request, and make a recommendation, as well as advise us on appropriate precautionary labeling (if we accept the waiver).

Acute TOX
WAIVER

DP#: (312611) *** Studies Sent for Review *** Decision#: (352492)

MRID	Citation Reference	Guideline
46422702	Lawyer, A.; Mezin, L. (2004) Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Using Existing Studies as Surrogate/Bridge. Unpublished study prepared by Arvesta Corporation. 12 p.	870.1100/Acute oral toxicity
46422702	Lawyer, A.; Mezin, L. (2004) Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Using Existing Studies as Surrogate/Bridge. Unpublished study prepared by Arvesta Corporation. 12 p.	870.1200/Acute dermal toxicity
46422702	Lawyer, A.; Mezin, L. (2004) Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Using Existing Studies as Surrogate/Bridge. Unpublished study prepared by Arvesta Corporation. 12 p.	870.1300/Acute inhalation toxicity
46422702	Lawyer, A.; Mezin, L. (2004) Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Using Existing Studies as Surrogate/Bridge. Unpublished study prepared by Arvesta Corporation. 12 p.	870.2400/Acute eye irritation
46422702	Lawyer, A.; Mezin, L. (2004) Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Using Existing Studies as Surrogate/Bridge. Unpublished study prepared by Arvesta Corporation. 12 p.	870.2500/Acute dermal irritation
46422702	Lawyer, A.; Mezin, L. (2004) Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Using Existing Studies as Surrogate/Bridge. Unpublished study prepared by Arvesta Corporation. 12 p.	870.2600/Skin sensitization

DP#: (312611) *** Additional Data Package for this Decision *** Decision#: (352492)

DP #	Division/Branch	Date Sent	Date Due	Instructions?	CSF	label
312609	RD / TRB	31-Jan-2005	17-Nov-2007	○ Yes ○ No	● Yes ○ No	● Yes ○ No
312609	RD / FB	31-Jan-2005	17-Nov-2007	○ Yes ○ No	● Yes ○ No	● Yes ○ No

RESTRICTED USE PESTICIDE
DUE TO ACUTE TOXICITY

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

MIDAS™ 50:50

For Pre-Plant Fumigations of Fields Intended for Commercial Production of Various Crops, Ornamentals, Bushes, Trees and Vines for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases.

ACTIVE INGREDIENTS:

Iodomethane	50.00%
Chloropicrin	50.00%
TOTAL:	100.00%

One gallon weighs 15.9 pounds (7.95 pounds Iodomethane and 7.95 pounds Chloropicrin).

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detaille. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) assistance: Call CHEMTREC at 1-800-424-9300.

For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - ____ Net Contents _____
EPA Est. No.: ___ - __

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Corrosive to skin. Causes skin burns. May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. If clothing or absorbent materials (e.g. leather) have been drenched or heavily contaminated with this product, discard these items - do not reuse them. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains chloropicrin, a poisonous liquid or vapor. Inhalation of vapors may be fatal. Chloropicrin is readily identified by smell. Exposure to very low concentrations of vapor will cause irritation of eyes, nose and throat. Continued exposure after irritation is evident or higher concentrations may cause painful irritation to the eyes or temporary blindness. Liquid will cause chemical burns to skin or eyes. Do not get on skin, in eyes, or on clothing. Chloropicrin fumigant has the capacity to cause marked irritation to the upper respiratory tract and is a strong lachrymator (tear producing eye irritant). Low concentrations, below those necessary to cause serious systemic intoxication, are capable of causing severely painful eye irritation, hence will not be voluntarily tolerated. However, the effect may be so powerful that a person may

become temporarily blinded and panic-stricken and that in turn may lead to accidents.

AIR CONCENTRATION LEVEL

The acceptable air concentration for persons exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3) and the concentration for iodomethane is 0.19 ppm (1.10 mg/m^3). Persons involved in the application of MIDAS 50:50 or in reentry into treated fields may be exposed to the vapors of one or both of these active ingredients, dependent on such factors as the weather (e.g., temperature, wind, rain) and the condition of the soil. Air concentrations of chloropicrin and iodomethane are measured with direct reading devices, such as Kitigawa tubes, certified for chloropicrin or iodomethane. If the air concentration exceeds 0.1 ppm chloropicrin or 0.19 ppm iodomethane, an air-purifying respirator must be worn. If the air concentration exceeds 4 ppm chloropicrin or 5 ppm iodomethane, an air-supplying respirator or self-contained breathing apparatus must be worn.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- It is prudent to wear an appropriate respirator whenever applying chemical fumigants such as iodomethane and chloropicrin, however, for MIDAS 50:50, personal respiratory protection devices are only required under the following circumstances: If within the working area, at any time, the air concentration of chloropicrin exceeds 0.1 ppm or the air concentration of iodomethane exceeds 0.19 ppm, applicators and other handlers must wear either (a) a respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C), (b) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) or (c) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F)If the air concentration exceeds 4 ppm chloropicrin or 5 ppm iodomethane at any time, or if direct reading devices are not available for determining the air concentrations in the field, applicators and other handlers must wear (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) OR (b) a self-contained breathing apparatus (SCBA)(MSHA/NIOSH approval number prefix TC-13F).
- Drivers may use a closed cab equipped with an approved iodomethane/ chloropicrin adsorptive vapor filter in lieu of a personal respiratory protection device. This iodomethane/chloropicrin filter must be installed and changed according to the manufacturer's specifications.
- Drivers may use tractor mounted working area air fan dilution system in lieu of a personal respiratory protection device.
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

A respirator of the type specified above must be available during applications of MIDAS 50:50 and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

MIDAS 50:50 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of a type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials (e.g. leather), that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside, then wash thoroughly and put on clean clothing. If clothing is drenched or heavily contaminated with this product, discard clothing or absorbent materials (e.g. leather) - do not reuse them.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled

by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), restricted entry intervals, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

Entry Restrictions:
Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 48 hours after application and the air concentration of chloropicrin is measured to be less than 0.1 ppm. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification at Entrances to Treated Areas:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The signs must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane and Chloropicrin Fumigants In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post these fumigant warning signs instead of the WPS signs for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting

and removal. These fumigant warning signs shall be posted for no less than 48 hours.

Notification for Occupied Areas Adjacent to Treated Fields (Buffer Zones):
During the 24 hour period following application of MIDAS 50:50, it is required that the user prohibit persons from being present in areas adjacent to the treated field, as described in this section. These adjacent areas, where persons are restricted during the 24 hours following application, are called "Buffer Zones". The factors that trigger the need for Buffer Zones, and the size and shape of these Buffer Zones, are determined by following the Steps provided below.

The activities that are prohibited for 24 hours within a Buffer Zone include any activities that result in a person being present within the Buffer Zones for more than 1 hour during the 24 hour period following application. Examples of activities that are restricted are work or recreation within a Buffer Zone, or occupation of structures that are within a Buffer Zone for more than a total of 1 hour during the 24 hour period following application. Examples of activities that are not included are driving past the treated field or occupying a structure that is not within the Buffer Zone.

Follow these steps to determine whether a Buffer Zone must be established and determine what the size and shape of the Buffer Zone will be:

Step 1 – Need For Buffer Zone:

- If there is a reasonable expectation that persons will be present at locations adjacent to the treated field for more than a total of 1 hour during the 24 hour period following the application, then a Buffer Zone is required. Calculate the Buffer Zone distance (Step 2) then adjust for application rate (Step 3) and prevailing wind (Step 4), if applicable. Then re-determine the need for a Buffer Zone (Step 5).

- For all applications where a Buffer Zone is required, the minimum Buffer Zone size shall extend 25 feet from the edge of the treated field.

Step 2 – Determine Buffer Zone Distance:

- For Applications Up to 5 Acres per Day: The Buffer Zone shall extend to 25 feet from the edge of the treated field.

- For Applications Between 5 and 20 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  25 feet + ((Acres Treated Per Day – 5) x 15 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

- For Applications Between 20 and 40 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  250 feet + ((Acres Treated Per Day – 20) x 12.5 feet) =

Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

Step 3 – Adjust Buffer Zone to Account for Application Rate:

- The size of the Buffer Zone is reduced proportionally with the application rate, compared to the maximum rate of 350 lbs MIDAS 50:50 per treated acre. Use the following formula, utilizing the distances calculated in Step 2, to determine the adjusted size of the Buffer Zone:

  Distance From the Edge of the Treated Field (Adjusted for Acres Treated) x (Application Rate [lbs MIDAS 50:50 per treated acre]/350) = Distance From the Edge of the Treated Field (Adjusted for Application Rate)

- In no case shall this adjustment of the Buffer Zone result in a Buffer Zone that is smaller than the Minimum Buffer Zone size of 25 feet from the edge of the treated field.

Step 4 – Adjust Buffer Zone Configuration to Account for Prevailing Wind:

- When there is a clear historical expectation that a single, dominant prevailing wind direction will be present during the 24 hour period following the initiation of the application, the Buffer Zone can be limited to the semi circle downwind from the treated field.

Step 5 – Re-Determine Need For Buffer Zone:

- A Buffer Zone is not required if, after following the previous steps and determining the size and shape of the Buffer Zone, the locations identified in Step 1 (as being likely to be occupied for more than 1 hour during the 24 hours following the application) are not within the calculated Buffer Zone.

Applications shall not be made within 100 ft of occupied sensitive sites. Sensitive sites are schools, convalescent homes, and hospitals.

Users must ensure that persons are not present within the Buffer Zone for 24 hours following application.

PPE For Reentry During the Entry-Restricted Period:
Reentry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:

  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane and Chloropicrin Fumigants in Use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing all other workers information about precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film and the edges of the film buried under at least 4 inches of compacted soil before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.

- Remove the plastic tarps with a minimum of two trained people present during the operation.
- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration of chloropicrin is measured to be less than 0.1 ppm and no sooner than 48 hours following application. Signs must remain legible during entire posting period. Signs that identify the "buffer zone" adjacent to the treated field can be removed 24 hours following application.
- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 0.1 ppm chloropicrin in the air space around the treated site.
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 200 lbs (12.6 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that must only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: MIDAS 50:50 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium* and *Rhizoctonia*. It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, trees, vines, and to soils intended for strawberry nursery use.

Soil Fumigation using MIDAS 50:50 must be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed

seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants, the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply MIDAS 50:50 by shank fumigation Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of no less than 6 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately following the chisel, except when applied by deep-shank broadcast application, as detailed below under "Iodomethane Pre-Plant Field Fumigation Methods". Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 10 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold.

To minimize the potential for crop injury, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if MIDAS 50:50 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin used in MIDAS 50:50 is detectable.

CROP ROTATION RESTRICTIONS
Strawberries, fresh market tomatoes and peppers can be planted into treated soil as soon as crop safety can be assured and no sooner than 10 days after treatment. Crops other than strawberry, tomatoes, peppers require a 4 month plant back rotation restriction.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	MIDAS 50:50 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	200 – 350 lbs/A (12.6 – 22.0 gal/A)	10 – 14 days

Strawberry Nursery*	350 lbs/A (22.0 gal/A)	10 – 14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	200 – 350 lbs/A (12.6 – 22.0 gal/A)	10 – 14 days
Trees Vines	240 – 350 lbs/A (15.1 – 22.0 gal/A)	10 – 14 days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 300 lbs/A (18.9 gal/A) of MIDAS 50:50 be applied.

*** Tarps are not to be removed for at least 5 days following application. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation. Use the longer planting restriction periods under conditions of high soil moisture, heavy soils, or rain.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts.

FOR TREES AND VINES – PREPLANT DEEP INJECTION AUGER-PROBE TREATMENT: Use 2 lbs of MIDAS 50:50 per injection site, typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 30 days after the period of exposure. DO NOT PLANT if the odor of the chloropicrin used in MIDAS 50:50 is detectable.

DRIP IRRIGATION (CHEMIGATION):
Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigations system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments, should the need arise.
- A surfactant registered for use with chloropicrin is required (Arvesta TM-456 or an alternate product recommended by Arvesta Corporation must be used).
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

- "Public water system" means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, automatic valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.
- MIDAS 50:50 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.
- The dilution rate for drip-line fumigation is 1,400 - 2000 ppm. One gallon of MIDAS 50:50 in 2650 gallons of water is equivalent to 1,000 ppm. MIDAS 50:50 must be metered into the water.
- Soil must be in good tilth and condition. F, free of clods and un-decomposed soil material.
- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC must not be exposed to undiluted MIDAS 50:50 or more than 2,000 ppm MIDAS 50:50 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.
- In very sandy soils, apply MIDAS 50:50 when soil conditions throughout the treatment zone are near field capacity. When necessary, apply a pre-treatment amount of water to wet the bed and enhance even movement of the material through the soil profile at time of treatment.

- Apply MIDAS 50:50 with the surfactant Arvesta TM-456 or an alternate surfactant recommended by Arvesta Corporation to aid in the solubility of the compound in irrigation water, when applied alone or in combination with chloropicrin at a rate of 5 lbs of surfactant per 95 lbs of MIDAS 50:50.
- MIDAS 50:50 must be monitored as it enters the irrigation system and must pass through a static mixer, coarse filter, or fine strainer or equivalent devices to insure proper mixing before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs, discontinue the application immediately and cover the contaminated soil area with clean soil to absorb the material.
- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or injection pump.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphragm pump, venturi system or a pressure safe cylinder containing MIDAS 50:50 equipped with a metering valve and flow meter.
- Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of MIDAS 50:50. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW MIDAS 50:50 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 10 days after fumigation. Then proceed with normal agricultural practices normal for crop management activities.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS:

For best results, fumigations with MIDAS 50:50 shall be performed in accordance with the following application techniques. Consult with your regional agricultural advisor or Arvesta representative regarding other techniques that represent best management practices in your area.

Tarpaulin/Shallow/Broadcast

- Use either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller.
- Injection depth between 6and 15 inches.
- Injection spacing of 12 inches or less.

- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
    - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
    - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of chloropicrin is readily evident by onset of eye irritation or odor.
    - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Rearward-curved (swept-back) chisels with either:
    - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
    - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
    - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth of between 6 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing of 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
    - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
    - Be at least 14 days. If this option is chosen, the chloropicrin air concentration underneath the tarpaulin must test less than 0.1 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Forward-curved chisels with either:
  - An air fan dilution system on the application tractor; or
  - Closing shoes and compaction roller.
- Injection depth of at least 18inches.
- Injection spacing of 68inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of chloropicrin is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Forward-curved chisel used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing of 66 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using chloropicrin or any other fumigant or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane or methyl bromide per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.
2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.
3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION,
PESTICIDES AND TOXIC SUBSTANCES

17/JUNE /2002

-43A
old review

MEMORANDUM

Subject: EPA Reg. No: 66330-UG TM 42501
DP Barcode: D282272
Case No: 071529
PC Code: 00011, 81501

From: Masih Hashim, Toxicologist
Technical Review Branch
Registration Division (7505C)

To: Myrta Christian, PM 21
Fungicide Branch
Registration Division (7505C)

Applicant: Arvesta Corporation
100 First Street
San Francisco, CA 94105

FORMULATION FROM LABEL:

Active / Other Ingredient(s):	% by wt.
Iodomethane	98.0
Chloropicrin (odorant)	2.0
Total:	100.0

ACTION REQUIRED: PM requests a review of the acute toxicity studies for the File 66330-UG.

BACKGROUND: Arvesta Corporation has submitted a set of acute toxicity studies (MRID 455942-04 thru 455942-08) to support the registration of its product TM-42501, File Symbol 66330-UG. The product contains Iodomethane and chloropicrin. The animal studies were conducted at the Springborn Laboratories, Spencerville, Ohio.

RECOMMENDATIONS: The acute toxicity studies on TM-42501 are in compliance with the Sub- Division F guidelines.

The Company could have saved a few animals and pain and stress to these animals by citing the eye irritation study (Tox Category I) from the technical completed last year. Adding chloropicrin (2%) to this product will not (normally) alter the toxicity of the product. One of the priorities of EPA is to minimize the use of laboratory animals for FIFRA studies. We are surprised with this (repeat) test.

Toxicology profile for the proposed product TM-42501 is as follows:

acute oral toxicity	II	acceptable	MRID 455942-04
acute dermal toxicity	III	acceptable	MRID 455942-05
acute inhalation	IV	cited	MRID 456413-01
primary eye irritation	I	acceptable	MRID 455942-06
primary dermal irritation	II	acceptable	MRID 455942-07
dermal sensitization	pos.	acceptable	MRID 455942-08

LABELING:

PRODUCT ID #:66330-41

PRODUCT NAME: TM-42501

PRECAUTIONARY STATEMENTS

SIGNAL WORD: DANGER

Hazards to Humans and Domestic Animals:

Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Wear protective eye wear. Avoid contact with skin. Remove contaminated clothing and wash them before reuse. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

May be fatal if swallowed. Harmful if absorbed through skin. Causes skin irritation. Do not get into skin or on clothing.

Prolonged or frequent repeated skin contact may cause allergic reaction in some individuals.

First Aid:

If swallowed:
-Call a poison control center or doctor immediately for treatment advice.

-Do not induce vomiting unless told to by a poison control center or doctor.
-Do not give anything to an unconscious person.

If on skin:
-Take off contaminated clothing.
-Rinse skin immediately with plenty of water for 15-20 minutes.
-Call a poison control center or doctor for treatment advice.

If in eyes:
-Hold eye open and rinse slowly and gently with water for 15-20 minutes.
-Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
-Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor.

Note to Physician:
Mucosal damage may contraindicate the use of gastric lavage.

DATA EVALUATION RECORD

STUDY TYPE: ACUTE ORAL TOXICITY TESTING (870-1100)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2) , Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) An Acute Oral Toxicity Study (Up/Down Design) in Rats with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3527.25 dated 1-25-02, MRID 455942-04. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: An acute oral toxicity study (455942-04) was conducted on Iodomethane /Chloropicrin (98:2) using the Up/Down procedure in SD rats (wt. 293-299 g f-190-212 g, Source: Harlan Sprague Dawley). The study utilized several dose levels from 70 to 260 mg/kg using 1 to 3 animal(s)/dose level (Table 1). The animals were observed daily and weekly body weights were taken. Gross pathology was recorded at necropsy (page 11of the study report).

Oral LD_{50} for Iodomethane /Chloropicrin (98:2) in male rats was 151 mg/kg, and 82 mg/kg in females. This study is classified as Tox Category II.

Table 1 shows mortality in rats for each dose level. Major clinical signs in decedent animals and one surviving animal included decreased activity, breathing abnormalities, decreased/no defecation, hypothermia, hunched posture, ocular discharge, dilated pupils, closed eyelids, dark material around eyes, salivation and nasal discharge. Body weights were also affected during the test period.

Necropsy findings in decedents included red lungs, and abnormal contents in the gastrointestinal tract. Necropsy findings in terminal animals were not significant.

This study (870-1100) is Acceptable in accordance with the Sub-Division F guidelines.

COMPLIANCE: The study is in compliance with GLP, signed and dated.

RESULTS:

Table 1. Number of Deaths/ Number of animals Tested

Dosage mg/kg	Male	Female
70	-	0/1
91	-	2/3
118	0/1	2/2
154	2/2	1/1
200	1/2	1/1
260	1/1	-

OBSERVATIONS: Mortality occurred in males by Day 0, and by Day 2 in females. Major clinical signs in decedent animals and one surviving animal included decreased activity, breathing abnormalities, decreased or no defecation, hypothermia, hunched posture, ocular discharge, dilated pupils, closed eyelids, dark material around eyes, salivation and nasal discharge. Body weight were also affected during the test period.

Necropsy Findings: Necropsy findings included red lungs, abnormal contents in the gastrointestinal tract. Terminal necropsy findings in animals were not significant.

DATA EVALUATION RECORD

STUDY TYPE: ACUTE DERMAL TOXICITY TESTING (870-1200)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2), Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) An Acute Dermal Toxicity Study in Rats with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3528.26 dated 1-25-02, MRID 455942-05. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: In a single dose dermal toxicity study (MRID 455942-05) with Iodomethane / Chloropicrin (98:2), Sprague Dawley rats, 5/sex (wt.- 311-345 g, fe- 196-227 g, Source: Harlan Sprague Dawley, Indianapolis, IN) were topically applied with a limit dose at 2000 mg/kg body weight. Animals received the test substance on 10% (body) surface area spread evenly and held in contact with the skin using a gauze patch (+occlusive binding). This was secured by an elastic wrap and a tape over the trunk of the animal. The wrappings were removed after 24 hours and the test sites were cleaned. Animals were observed for mortality and signs of gross toxicity for 14 days. Weekly body weights and terminal necropsy findings were recorded.

Dermal LD50 of Iodomethane /Chloropicrin (98:2) in male/female rats was > 2000 mg/kg. The test substance is classified as tox Category III.

There were no deaths on the study. Dermal irritation was noted on the test site. Animals had dark material around the facial area, and showed decreased defecation.

This study (870-1200) is Acceptable in accordance with the Sub-Division F guideline.

COMPLIANCE: The study is in compliance with GLP, signed and dated.

RESULTS:

Number of Deaths/ Number tested

Dosage mg/kg	Male	Female	Total
2000	0/5	0/5	0/10

OBSERVATIONS: There were no deaths on the study. Weight gain was not affected. There was dark material around the facial area. Dermal irritation was noted at the test site.

NECROPSY FINDINGS: Unremarkable.

DATA EVALUATION RECORD

STUDY TYPE: PRIMARY EYE IRRITATION TESTING (870-2400)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2) , Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) A Primary Eye Irritation Study in Rabbits with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3527.27 dated 1-25-02, MRID 455942-06. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: In a primary eye irritation study (MRID 45504906), 0.1 ml Iodomethane /Chloropicrin (98:2) was placed into the conjunctival sac of the right eye of each of the 6 NZW rabbits (Myrtle's Rabbitry, Thompson Station, TN). The eye lid was held closed for one second after instillation. The contra lateral eye of each animal served as the control. All eyes were graded for irritation such as abnormalities of cornea, iris and conjunctiva at 1, 24, 48, and 72 hours, up to 21 days. (*Only the 3 unwashed eyes are included in this summary since unwashed eyes are required for the Agency).*

All animals showed conjunctivitis at the 1st hour reading, 2 of 3 animals showed iritis (Table 1). All animals showed lesions in cornea, iris and conjunctiva at 24 hours. Corneal opacity and conjunctival lesions still remained in 2 of 3 animals, and iritis in 1 of 3 animals through 21 days. Mean ocular score at 24 hours was 45.0, and 27.0 on 21st day.

Iodomethane /Chloropicrin (98:2) is a severe irritant/ corrosive to the rabbit eye and is classified as Tox Category I.

This study (870-2400) is Acceptable in accordance with the Sub-Division F guidelines.

COMPLIANCE: The study is in compliance with GLP requirements, signed and dated.

RESULTS:

Table 1. Eye lesions/ No. of animals affected

Lesion	1 hr	24	48	72	7 days	10	14	21
Corneal opacity	0/3	3/3	2/3	2/3	2/3	2/3	2/3	2/3
Iritis	2/3	3/3	2/3	2/3	2/3	2/3	1/3	1/3
Conjunctivitis	3/3	3/3	3/3	3/3	2/3	2/3	2/3	2/3

DATA EVALUATION RECORD

STUDY TYPE: PRIMARY DERMAL IRRITATION TESTING (870-2500)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2) , Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) A Primary Skin Irritation Study in Rabbits with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3527.28 dated 1-25-02, MRID 455942-07. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: In a primary dermal irritation study (MRID 455942-07), 0.5 ml of Iodomethane/ Chloropicrin (98:2) was topically applied to the clipped intact skin at the dorsum (1x1 inch) of each of 3 NZW rabbits (Source: Myrtle's Rabbitry, Thompson Station, TN). A gauze patch and a semi occlusive binder was used to keep the test article in place for 3 minutes, 1 hour, and 4 hours (one site for each exposure). After each exposure period, the binder was removed and the remaining test article was wiped out from the skin using a wet gauze. The test sites were examined for dermal irritation at (timely) intervals up to 14 days.

The test substance produced (well defined) moderate erythema and severe edema in 3 of 3 animals at each exposure time, i.e., 3 minutes, 1 hour and 4 hours. Irritation resolved by 14th day of study. Superficial lightening and desquamation were also noted (around) the test sites. The irritation indices were:

3 minutes 4.67, one hour 5.17, and for 4 hours 5.67.

Iodomethane / Chloropicrin (98:2) is a severe skin irritant in rabbits, it is classified as Tox Category II. The study is Acceptable in accordance with the Sub Division F guideline.

COMPLIANCE: The study(870-2500) is in compliance with GLP, signed and dated.

OBSERVATIONS: The test substance produced (well defined) moderate erythema and severe edema in 3 of 3 animals at each exposure time, i.e., 3 minutes, 1 hour and 4 hours. Irritation resolved by 14th day of study. Superficial lightening and desquamation were also noted (around) the test sites. The irritation indices were: 3 minutes 4.67, one hour 5.17, and for 4 hours 5.67.

DATA EVALUATION RECORD

STUDY TYPE: DERMAL SENSITIZATION TESTING (870-2600)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2) , Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) A Dermal Sensitization Study (Modified Buehler Design) in Guinea Pigs with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3527.31 dated 1-25-02, MRID 455942-08. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: Dermal sensitization potential of Iodomethane /Chloropicrin (98:2) was evaluated in Hartley albino guinea pigs using the Modified Buehler Method (MRID 455942-08). Twenty guinea pigs (10/sex) were topically treated with 10% test substance (w/v in polyethylene glycol, PEG 400). This (induction) procedure was performed once a week for 3 consecutive weeks. After a 2-week rest period, these animals in addition to 10 naive controls, were challenged with 5% test substance (w/v in PEG 400).

Following the challenge dose 17 of 20 test animals at 24 hours, and 10 of 20 animals at 48 hours elicited (slight) positive response (score of 1). Control animals showed no response (score 0). Iodomethane /Chloropicrin (98:2) is considered a contact sensitizer.

DNCB and HCA were used for validation of the test system, both as the historical controls. The response was appropriate.

COMPLIANCE: The test meets GLP requirements. It is Acceptable in accordance with the Sub Division F guide lines.

ACUTE TOX ONE-LINERS

1. DP BARCODE: D282272
2. PC CODE: 00011, 81501
3. CURRENT DATE: 6-17-02
4. TEST MATERIAL: Iodomethane /Chloropicrin (98:2)

Study/Species/Lab Study #/Date	MRID	Results	Tox. Cat.	Core Grade
Acute oral toxicity study/ rat/ Springborn Labs/ 3522.25/ 1-25-02	455942-04	LD_{50} = 117 mg/kg (for m+f)	II	A
Acute dermal toxicity study/ rat/ Springborn Labs/ 3527.26/ 1-25-02	455942-05	Dermal LD_{50} > 2000 mg/kg	III	A
Primary eye irritation study/ rabbit/ Springborn Labs/ 3527.27/ 1-25-02	455942-06	corrosive	I	A
Primary dermal irritation/ rabbit/ Springborn Labs/ 3527.28/ 1-25-02	455942-07	severe irritant	II	A
Dermal sensitization/ g. pig/ Springborn Labs/ 3527.31/ 1-25-02	455942-08	contact sensitizer	-	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, V = Self Validated

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND
TOXIC SUBSTANCES

June 18, 2002

MEMORANDUM

-43

Product Name: TM-42501
EPA File Symbol: 66330-UG
Company: Arvesta Corporation
DP Barcode: D282078
Case No: 071529
Submission: S613235
Chemical: 000011 Iodomethane

From: Byron T. Backus, Ph.D., Toxicologist
Technical Review Branch
Registration Division (7505C)

To: Myrta Christian/Mary Waller PM 21
Registration Division (7505C)

ACTION REQUESTED: "Please review the attached study MRID #45641301 "An acute inhalation (Nose-only) study of Iodomethane/chloropicrin 98:2 (TM-42501) in rats."

BACKGROUND: No label was provided for this submission. However, the test material contained 98% iodomethane and 2% chloropicrin, so that presumably it would declare as an active ingredient the iodomethane at 98%, consistent with information on the bean sheet.

COMMENTS AND RECOMMENDATIONS:

1. The study in MRID 45641301 has been classified as acceptable.

2. The test material (containing 98% iodomethane and 2% chloropicrin) is in toxicity category IV in terms of its inhalation hazard potential. A partial acute toxicity profile is given below:

Acute inhalation LC50	Category IV	Acceptable (MRID 45641301)

3. As this is not a complete acute toxicity profile, and as the product is in toxicity category IV in terms of its acute inhalation toxicity hazard potential, TRB is unable to make any recommendations regarding the product's precautionary labeling at this time.

DATA REVIEW FOR ACUTE INHALATION TOXICITY TESTING (870.1300, formerly §81-3)

Product Manager: 21 **Reviewer:** Byron T. Backus, Ph.D.
MRID No.: 45641301

CITATION: Hilaski, R.J. An Acute Inhalation (nose-only) Toxicity Study of Iodomethane/ Chloropicrin 98:2 (TM-42501) in Rats. Laboratory Study Identification 926-001. Unpublished study prepared by MPI Research, Inc., 54943 N. Main St., Mattawan, MI 49071-9399. Study Completion Date: March 28, 2002. MRID 45641301.

SUBMITTER: Arvesta Corporation

STUDY SPONSOR: Tomen Agro, Inc., 100 First Street, Suite 1700, San Francisco, CA 94105

TEST MATERIAL: Iodomethane 98%/Chloropicrin 2% (TM-42501), Lot No. 920178/30501-1, described as a yellow liquid with an expiration date of November 7, 2003. Note: the certificate of analysis on p. 23 of MRID 45641301 is for a formulation containing Iodomethane 25%/Chloropicrin 75%.

SPECIES: Rat, albino, Sprague-Dawley Crl:CD(SD)IGS BR
AGE(at exposure): young adult, approximately 2 months old
WEIGHT (at exposure): Males: 248-308 g; Females: 175-205 g;
SOURCE: Charles River Laboratories, Portage, MI

EXECUTIVE SUMMARY: ***In an acute inhalation toxicity study (MRID 45641301), groups of 5 male and 5 female young adult (approximately 2 months old) albino Sprague-Dawley Crl:CD(SD)IGS BR rats received 4-hour nose-only exposures to mean concentrations of 107, 317, 489, 729 or 1036 ppm (as the mean molecular weight of a 98% iodomethane 2% chloropicrin formulation would be 142.4 these values would be respectively equivalent to 0.623, 1.85, 2.85, 4.25 and 6.03 mg/L of the test material) of TM-42501, Lot No. 920178/30501-1 (containing Iodomethane 98%/Chloropicrin 2%). The report does not give mean MMADs and GSDs, however, iodomethane has a relatively low boiling point (42.4°C); while chloropicrin has a somewhat higher boiling point (112.2°) it has a relatively high vapor pressure (equivalent to 18.3 mm Hg at 20°C).***

There were no mortalities at the two lowest concentration exposure levels (107 and 317 ppm, or 0.623 and 1.85 mg/L), with all animals normal by days 7 and 9 respectively. At 489 ppm (2.85 mg/L) 2/5 males and 0/5 females died, with most of the animals still showing clinical signs (including difficult/audible/rapid breathing) 14 days after exposure. At 729 ppm (4.25 mg/L) 5/5 males and 3/5 females died; the two surviving females were normal by day 9. At 1036 ppm (6.03 mg/L) 5/5 males and 5/5 females died, with most mortalities on the day after exposure. At the lowest exposure level (0.623 mg/L) symptoms were minimal (one male and one female had skin that was cold to the touch 4 hours after exposure, one female had rapid breathing on days 2-5, another female was vocalizing at 2 and 4 hours after exposure and again on days 3-6, with few feces on day 4, and another female had few feces on days 3-5). Symptoms at higher dose levels included audible/difficult/rapid/shallow breathing, soft/few feces, vocalization, skin warm/cold to touch, yellow/red/brown material around the eyes/nose/mouth, salivation, decreased activity, hunched posture, unkempt appearance, aggressive behavior, red material in pan, tremors, retropulsion and clear nose/muzzle discharge. Exposure to the test article at all concentrations resulted in body weight

losses (10-28% for males and 12-18% for females) and reduced mean body weight gains up to day 3. However, except for one male and one female in the 489 ppm (2.85 mg/L) and one female in the 729 ppm (4.25 mg/L) groups all survivors equaled or exceeded their pretest weight at the end of the 14-day observation period.

Individual neurobehavioral observations were made prior to exposure, within 45 minutes following exposure, at 2-2.5 hrs post exposure, at 4-4.5 hrs post exposure, and on a daily basis thereafter. In the period following exposure, general tremors were present in some males and females at all dose levels; at higher dose levels there was a lack of response following sensory stimulus. These symptoms were generally gone by day 9.

All rats that died during the observation period had mild to moderate red discolored lungs. Following terminal sacrifice, one surviving male from the 107 ppm (0.623 mg/L) group, two surviving males and one surviving female from the 317 ppm (1.85 mg/L) group, and one surviving male and one surviving female from the 489 ppm (2.85 mg/L) group had red discolored lungs.

Inhalation LC50 Males = 496 ppm (=2.89 mg/L)
Inhalation LC50 Females = 719 ppm (=4.18 mg/L)
Combined LC50 = 618 ppm (=3.60 mg/L) with 95% C.L. of 519-728 ppm (=3.02 to 4.24 mg/L).

TM-42501, Lot No. 920178/30501-1 (containing Iodomethane 98%/Chloropicrin 2%) is in toxicity category IV in terms of acute inhalation toxicity, based on the lowest LC50 value (2.89 mg/L for male rats).

Study Classification: Acceptable

COMPLIANCE: Signed and dated Statement of Compliance with GLP (p. 3), Quality Assurance (p. 7) and No Data Confidentiality (p. 2) statements are provided.

Procedure (including deviations from 870.1300): Exposure was nose-only for four hours. "Exposure atmospheres were generated by delivering the test article vapor from a 200 L gas bag to the chamber... The concentration of the test article vapor in the gas bag was based on the desired concentration in the exposure chamber. Test article vapor and compressed air, metered by a flowmeter, entered the chamber inlet tee and [were] mixed to provide the desired concentration... Examinations for clinical findings were conducted on all animals pre-test, every 15 minutes during the first exposure hour, hourly for the remaining exposure duration, within 45 minutes of removal from the exposure system, and at 2-2.5 and 4-4.5 hours post-exposure. Examinations continued daily for 14 days, or until all signs of reversible toxicity had subsided... Neurobehavioral examinations were conducted at the same intervals as the detailed clinical examinations, except during the exposure. Findings were detailed and carefully recorded using explicitly defined scales where possible. Findings included, but were not limited to, autonomic effects such as salivation, nervous system effects including tremors and convulsions, changes in the level of motor activity, gait and posture, reactivity to handling or sensory stimuli, grip strength, and stereotypies or bizarre behavior (e.g., self-mutilation, walking backwards)."

Mean Exposure Concentration ppm [mg/L] (Analytically Determined)	Number of Deaths/Number Tested		
	Males	Females	Combined
107 (104[a]+3[b]) [0.623 mg/L]	0/5	0/5	0/10
317 (310[a]+7[b]) [1.85 mg/L]	0/5	0/5	0/10
489 (478[a]+11[b]) [2.85 mg/L]	2/5	0/5	2/10
729 (689[a]+40[b]) [4.25 mg/L]	5/5	3/5	8/10
1036 (986[a]+50[b]) [6.03 mg/L]	5/5	5/5	10/10

[a]Mean concentration of iodomethane in ppm
[b]Mean concentration of chloropicrin in ppm
Data extracted in part from information on p. 17 of MRID 45641301.

From information on p. 14 of MRID 45641301 the nominal concentrations were 113, 355, 523, 728 and 994 ppm.

Clinical Observations: At 489 ppm [2.85 mg/L] one male was found dead 7 days after exposure and another male was found dead 14 days after exposure. At 729 ppm [4.25 mg/L] the 5 males died in the period 2 to 8 days after exposure; three female mortalities occurred in the period 3 to 8 days after exposure. At 1036 ppm [6.03 mg/L] all rats died in the period 1 to 7 days after exposure.

At the lowest exposure level (0.623 mg/L) symptoms were minimal (one male and one female had skin that was cold to the touch 4 hours after exposure, one female had rapid breathing on days 2-5, another female was vocalizing at 2 and 4 hours after exposure and again on days 3-6, with few feces on day 4, and another female had few feces on days 3-5). Symptoms at higher dose levels included audible/difficult/rapid/shallow breathing, soft/few feces, vocalization, skin warm/cold to touch, yellow/red/brown material around the eyes/nose/mouth, salivation, decreased activity, hunched posture, unkempt appearance, aggressive behavior, red material in pan, tremors, abnormal gait, retropulsion and clear nose/muzzle discharge. Exposure to the test article at all concentrations resulted in body weight losses (10-28% for males and 12-18% for females) and reduced mean body weight gains up to day 3. However, except for one male and one female in the 489 ppm (2.85 mg/L) and one female in the 729 ppm (4.25 mg/L) groups all survivors equaled or exceeded their pretest weight at the end of the 14-day observation period.

Neurobehavioral changes included tremors (usually within 4.5 hours of exposure), however, ½ female survivors at 729 ppm (4.25 mg/L) is reported as stumbling around in the cage on day 8 and presumably the same animal was the one exhibiting abnormal gait and convulsions. However, this animal had recovered from this episode the following day.

Gross Necropsy: All rats that died during the observation period had mild to moderate red discolored lungs. Following terminal sacrifice, one surviving male from the 107 ppm (0.623 mg/L) group, two surviving males and one surviving female from the 317 ppm (1.85 mg/L) group, and one surviving male and one surviving female from the 489 ppm (2.85 mg/L) group had red discolored lungs. However, euthanasia was by carbon dioxide inhalation and this finding may have been from euthanasia-associated hemorrhage in the lungs.

Particle Size Distribution: The report does not give mean MMADs and GSDs, however, iodomethane has a relatively low boiling point (42.4°C); while chloropicrin has a somewhat higher boiling point (112.2°) it has a relatively high vapor pressure (equivalent to 18.3 mm Hg at 20°C).

Chamber Environment	
Internal Chamber Volume	30 L(?)[a]
Mean Airflow (inlet)	7.0-9.8 LPM
Mean Temperature	19-21°C
Mean Relative Humidity	3 to 17%

[a]Not reported; however, on p. 27 of MRID 45641301 it is stated that "A minimum chamber airflow of 0.6 L/min/animal supplied by the generation system resulted in at least 12 chamber air changes per hour." As there were ten animals, there was at least 6 LPM (=360 LPH) airflow, and if there was then at least 12 chamber air changes per hour then the inference is that the chamber volume was approximately 30 L (360/12 = 30).

ACUTE TOX ONE-LINERS

1. **DP BARCODE:** D282078
2. **PC CODE:** 000011 Iodomethane
3. **CURRENT DATE:** June 18, 2002
4. **TEST MATERIAL:** [EPA File Symbol: 66330-UG]; TM-42501; Iodomethane 98%/Chloropicrin 2%, Lot No. 920178/30501-1, described as a yellow liquid with an expiration date of November 7, 2003.

Study/Species/Lab Study #/Date	MRID	Results	Tox. Cat.	Core Grade
Acute inhalation toxicity/rat/ MPI Research Inc. Mattawan MI/926-001/MARCH-28-2002	45641301	LC_{50} (M) = 2.89 mg/L; LC_{50} (F) = 4.18 mg/L; LC_{50} combined = 3.60 mg/L with 95% C.L. 3.02-4.24 mg/L. Groups of 5M & 5F Sprague-Dawley rats were exposed for 4 hrs to 107, 317, 489, 729 or 1036 ppm (=0.623, 1.85, 2.85, 4.25 and 6.03 mg/L). Report does not give MMADs or GSDs but Iodomethane has a low boiling point (42.4°C). No mortalities at 2 lowest concentrations; at 2.85 mg/L 2/5M and 0/5F died; at 4.25 mg/L 5/5M and 3/5F died; at 6.03 mg/L all died. At lowest exposure level (0.623 mg/L) symptoms were minimal (breathing abnormalities, vocalizations) with all animals normal by day 7.Symptoms included abnormal breathing, soft/few feces, vocalization, salivation, decreased activity, hunched posture. Exposure to test material at all concentrations resulted in body weight losses (10-28% for males, 12-18% for females) and reduced mean body weight gains. Rats dying during observation period had mild to moderate red discolored lungs.	IV	A

Core Grade Key: **A =Acceptable, S = Supplementary, U = Unacceptable, V = Self Validated**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION,
PESTICIDES AND TOXIC SUBSTANCES

20/JUNE /2002

-42
old
review

MEMORANDUM

Subject: EPA Reg. No: 66330-UE (TM-42503)
DP Barcode: D282076
Case No: 071525
PC Code: 000011, 81501

From: Masih Hashim, Toxicologist
Technical Review Branch
Registration Division (7505C)

To: Myrta Christian, PM 21
Fungicide Branch
Registration Division (7505C)

Applicant: Arvesta Corporation
100 First Street
San Francisco, CA 94105

FORMULATION FROM LABEL:

Active / Other Ingredients:	% by wt.
Iodomethane	25.0
Chloropicrin	75.0
Total:	100.0

ACTION REQUIRED: PM requests a review of the acute toxicity studies for the File 66330-UE, an agricultural pesticide.

BACKGROUND: Arvesta Corporation has submitted a set of five acute toxicity studies (MRID 456412-01 thru 456412-05) to support the registration of its product TM-42503, File Symbol 66330-UE The product contains Iodomethane: chloropicrin.(25:75). The animal studies were conducted at the Springborn Laboratories, Spencerville, Ohio and MPI Research, Mattawan, MI.

RECOMMENDATIONS: The acute toxicity studies on TM-42503 are in compliance with the Sub Division F guideline. TRB has granted a waiver for the eye irritation study citing MRID 455942-06 from 66330-UG.

Toxicology profile for the proposed product 66330-UE is as follows:

acute oral toxicity	II	acceptable	MRID 456412-01
acute dermal toxicity	III	acceptable	MRID 456412-02
acute inhalation	II	acceptable	MRID 456412-03
primary eye irritation	I	cited	MRID 455942-06
primary dermal irritation	I	acceptable	MRID 456412-04
dermal sensitization	pos.	acceptable	MRID 456412-05

LABELING:

PRODUCT ID # 66330-42

PRODUCT NAME: TM-42503

PRECAUTIONARY STATEMENTS

SIGNAL WORD: DANGER

Hazards to Humans and Domestic Animals:

Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Wear protective eye wear. Corrosive to skin. Causes skin burns. Wear protective clothing and gloves. Remove contaminated clothing and wash them before reuse. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

May be fatal if swallowed. Harmful if absorbed through skin. Causes skin irritation. Do not get into skin or on clothing.

May be fatal if inhaled, do not breathe dust, vapor or spray mist. Wear a mask or respirator approved by NIOSH.

Prolonged or frequent repeated skin contact may cause allergic reaction in some individuals.

First Aid:

If swallowed:
-Call a poison control center or doctor immediately for treatment advice.
-Do not induce vomiting unless told to by a poison control center or doctor.
-Do not give anything to an unconscious person.

If on skin:
-Take off contaminated clothing.
-Rinse skin immediately with plenty of water for 15-20 minutes.
-Call a poison control center or doctor for treatment advice.

If in eyes:
-Hold eye open and rinse slowly and gently with water for 15-20 minutes.
-Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
-Call a poison control center or doctor for treatment advice.

If inhaled move the person to fresh air. If person is not breathing call 911 and give artificial respiration. Call a poison control center for further treatment.
Have the product container or label with you when calling a poison control center or doctor.

Note to Physician:
Mucosal damage may contraindicate the use of gastric lavage.

DATA EVALUATION RECORD

STUDY TYPE: ACUTE ORAL TOXICITY TESTING (870-1100)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42503, Iodomethane /Chloropicrin (25:75) , Lot No. 920178/30501-2, Clear colorless liquid.

CITATION: C.W. Wilson. (2002) An Acute Oral Toxicity Study (Up/Down Design) in Rats with Iodomethane/Chloropicrin 25:75 (TM-42503). Springborn Laboratories, Spencerville, Ohio 45887. Study #3527.20 dated 3-14-02, MRID 456412-01. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105

EXECUTIVE SUMMARY: An acute oral toxicity study (MRID 456412-01) was conducted on Iodomethane /Chloropicrin (25:75) using the Up/Down procedure in SD rats (wt.299-391 g f- 192-247 g, Source: Harlan Sprague Dawley, Indianapolis, IN). Animals were dosed by gavage from 68 to 500 mg/kg body weight. The rats were observed daily and (weekly) weights were recorded. Gross pathology was noted following death or scheduled euthanasia of each animal.

Oral LD_{50} for Iodomethane /Chloropicrin (25:75) in male rats was 120 mg/kg, and 77 mg/kg in females. The study is classified as Tox Category II.

Table 1 shows the number of deaths on the study. Main clinical signs in decedent animals and one surviving animal included decreased activity, breathing abnormalities, decreased or no defecation, eye lids partially closed, prostration, hypothermia, rough hair coat, piloerection, dehydration, hunched posture, salivation, nasal/ocular discharge, dilated pupils, closed eyelids, and dark material around eyes. Body weight gains were not affected in surviving animals.

Necropsy findings in decedents included dark and mottled lungs, and abnormal contents in the gastrointestinal tract. Necropsy findings in terminal animals were not significant.

This study (870-1100) is Acceptable in accordance with the Sub-Division F guidelines.

COMPLIANCE: The study is in compliance with GLP, signed and dated.

RESULTS: Table 1. Number of Deaths/ Number of Animals Tested

Dosage mg/kg	Male	Female
68	0/1	0/3
88	1/1	3/3
114	1/1	1/1
148	1/1	1/1
192	1/1	1/1
250	1/2	1/1
325	1/1	-
500	1/1	1/1

OBSERVATIONS: Mortality is shown in Table 1. Notable clinical signs in decedent animals and one surviving animal included decreased activity, breathing abnormalities, decreased or no defecation, eye lids partially closed, prostration, hypothermia, rough hair coat, piloerection, dehydration hunched posture, salivation, nasal/ocular discharge, dilated pupils, closed eyelids, and dark material around eyes. Body weight gains were not affected in surviving animals.

Necropsy Findings: Necropsy findings included dark and mottled lungs, and abnormal contents in the gastrointestinal tract. Terminal sacrifice animals were within normal range.

DATA EVALUATION RECORD

STUDY TYPE: ACUTE DERMAL TOXICITY TESTING (870-1200)

PRODUCT MANAGER: 21 **REVIEWER:** M. HASHIM

TEST MATERIAL: TM-42503, Iodomethane /Chloropicrin (25:75) , Lot No. 920178/30501-2, Clear colorless liquid.

CITATION: C.W. Wilson. (2002) An Acute Dermal Toxicity Study in Rats with Iodomethane/Chloropicrin 25:75 (TM-42503). Springborn Laboratories, Spencerville, Ohio 45887. Study #3527.21 dated 3-13-02, MRID 456412-02. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105

EXECUTIVE SUMMARY: In a single dose dermal toxicity study (MRID 456412-02) with Iodomethane /Chloropicrin (25:75), Sprague Dawley rats, 5/sex/ group (wt. m 277-335 g, fe- 192-235 g, Source: Harlan Sprague Dawley, Indianapolis, IN) were topically applied with 3 (stepwise) doses at 500, 1000 and 2000 mg/kg body weight. Animals received the test substance on 10% of the body surface area spread evenly and held in contact with the skin by a gauze patch and occlusive binding. The test sites were cleaned after 24 hours. Animals were observed for mortality and signs of gross toxicity for a period of 14 days. Weekly body weights and terminal necropsy findings were recorded.

Dermal LD_{50} of Iodomethane /Chloropicrin (25:75) in male/female rats was > 2000 mg/kg. The test substance is classified as tox Category III.

Mortality occurred by Day 2. Three of ten animals died at 2000 mg/ kg (Table 1). Notable clinical signs included dermal irritation, decreased activity, decreased defecation, hypothermia, dark material around the facial area, ocular discharge, and urine staining. Body weight gains were only seen in the surviving animals. Necropsy in decedents showed red mucosa of small intestine, abnormal content of the digestive tract, and subcutaneous edema at/around the treated site. Surviving animals showed no significant lesions.

This study (870-1200) is Acceptable in accordance with the Sub-Division F guideline.

COMPLIANCE: The study is in compliance with GLP, signed and dated.

RESULTS:

TABLE 1. Number of Deaths/ Number tested

Dosage mg/kg	Male	Female
500	0/1	0/5
1000	0/1	0/1
2000	1/5	2/5

OBSERVATIONS: Mortality occurred by Day 2. Three of ten animals died at 2000 mg/ kg (Table 1). Notable clinical signs included dermal irritation, decreased activity, decreased defecation, hypothermia, dark material around the facial area, ocular discharge, and urine staining. Body weight gains were only seen in the surviving animals.

NECROPSY FINDINGS: Necropsy in decedents showed red mucosa of small intestine, abnormal content of the digestive tract, subcutaneous edema of treated skin. Surviving animals showed no significant lesions.

DATA EVALUATION RECORD

STUDY TYPE: ACUTE INHALATION TOXICITY TESTING (870-1300)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42503, Iodomethane /Chloropicrin (25:75) , Lot No. 920178/30501-2, Clear colorless liquid.

CITATION: R.J. Hilaski. (2002) An Acute Inhalation (Nose-Only) Toxicity Study of Iodomethane/Chloropicrin 25:75 (TM-42503) in Rats. MPI Research, Mattawan, MI 49071. Study No. 926-002, dated 3-28-02. MRID 456412-03. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105

EXECUTIVE SUMMARY: A 4-hour inhalation study (MRID 456412-03) of Iodomethane /Chloropicrin (25:75) was conducted in four groups of 5 male and 5 female SD rats (weight: males 235-301 g fe 217-238 g, Source - Harlan Sprague Dawley, Indianapolis, IN). The analytical (vapor) concentrations were 23, 92, 61, and 35 ppm (0.14, 0.63, 0.32, 0.22 mg/L). During and post exposure observations were made for mortality and clinical signs. Weekly body weights and terminal necropsy finding were recorded.

Inhalation LC_{50} of Iodomethane /Chloropicrin (25:75) in male and female rats was 0.21 mg/L. This classifies the product as Tox Category II.

All animals died at 0.63 and 0.32 mg/L (Table 1). All males and one female died at 0.22 mg/L. Main clinical sings were abnormal breathing, vocalization, brown discoloration of skin, hunched posture, decreased activity, eyes partially closed, and tremors. The signs appeared in a dose response manner. Most surviving animals returned to normal by termination. The test caused a decrease in body weights (reduced the mean body weight gains). Necropsy showed no significant lesions. There was post mortem effect in the lungs (dark red color) in the decedents, and effects of euthanasia was noted in terminal animals (congestion).

The study (870-1300) is in accordance with the Sub Division F guidelines. The study is Acceptable and has the Tox Category II.

COMPLIANCE: This study meets GLP compliance, signed and dated.

RESULTS:

Table 1. Number of Deaths/ Total No. of Animals

Exposure Concentrations mg/L	Males	Females
0.63	5/5	5/5
0.32	5/5	5/5
0.22	5/5	1/5
0.14	0/5	0/5

Table 2. Chamber Atmosphere/ Environment (all concentrations)

Chamber	Air flow L/min	Temp. °C	Humidity
16,000 L containment system (52 ports) -nose only	6-10	19-21	3-20

(page 17 and 25 MRID 456412-03)

STUDY TYPE: PRIMARY DERMAL IRRITATION TESTING (870-2500)

PRODUCT MANAGER: 21 **REVIEWER:** M. HASHIM

TEST MATERIAL: TM-42503, Iodomethane /Chloropicrin (25:75) , Lot No. 920178/30501-2, Clear colorless liquid.

CITATION: C.W. Wilson. (2002) A Primary Skin Irritation Study in Rabbits with Iodomethane/Chloropicrin 25:75 (TM-42503). Springborn Laboratories, Spencerville, Ohio 45887. Study #3527.23 dated 2-26-02, MRID 456412-04. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105

EXECUTIVE SUMMARY: In a primary skin irritation study (MRID 456412-04), 0.5 ml of Iodomethane/ Chloropicrin (25:75) was topically applied to the shaved intact skin (Dorsum 1x1 inch) of each of 3 NZW rabbits (Source: Myrtle's Rabbitry, Thompson Station, TN). A gauze patch was placed over the test substance and held by a semi occlusive binder for each site: 3 minutes, 1 hour, and 1.5 hours. The 4-hour exposure was cut down to 1.5 hours due to (skin) corrosion noted at one hour . After each exposure, the binder was removed and the remaining test article was wiped out from the skin. The test sites were examined for dermal irritation up to 21 days.

The test substance produced erythema and edema on the test sites. Severity of lesion increased with the exposure time (3 minutes, one hour and 1.5 hours). Necrosis and blanching were noted (at one hour) in all animals at all exposures. Eschar and desquamation of the skin were also noted. Dermal irritation persisted for more than 21 days at 1.5-hour exposure. Primary irritation indices were: 5.92 at 3 minutes , 6.67 at 1-hour, and 6.75 at 1.5 hours.

Iodomethane /Chloropicrin (25:75) is corrosive to the rabbit skin, and is classified as Tox Category I. The study (870-2500) is Acceptable in accordance with the Sub Division F guidelines.

COMPLIANCE: The study is in compliance with GLP, singed and dated.

OBSERVATIONS: The test substance produced erythema and edema on the test sites. Severity of lesion increased with the exposure time (3 minutes, one hour and 1.5 hours). Necrosis and blanching were noted (at one hour) in all animals at all exposures. Eschar and desquamation of the skin were also noted. Dermal irritation persisted for more than 21 days at 1.5-hour exposure. Primary irritation indices were: 5.92 at 3 minutes , 6.67 at 1-hour, and 6.75 at 1.5 hours.

STUDY TYPE: DERMAL SENSITIZATION TESTING (870-2600)

PRODUCT MANAGER: 21 **REVIEWER:** M. HASHIM

TEST MATERIAL: TM-42503, Iodomethane /Chloropicrin (25:75) , Lot No. 920178/30501-2, Clear colorless liquid.

CITATION: C.W. Wilson. (2002) A Dermal Sensitization Study (Modified Buehler Design) in Guinea Pigs with Iodomethane/Chloropicrin 25:75 (TM-42503). Springborn Laboratories, Spencerville, Ohio 45887. Study #3527.30 dated 2-26-02, MRID 456412-05. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105

EXECUTIVE SUMMARY: Dermal sensitization potential of Iodomethane /Chloropicrin (25:75) was evaluated in Hartley albino guinea pigs using the Modified Buehler Design (MRID 456412-05). Twenty guinea pigs (10/sex) were topically treated with 5% test substance (w/v) in polyethylene glycol (PEG 400). This induction procedure was performed once a week for 3 consecutive weeks. After a 2-week rest period, these animals, in addition to 10 naive controls, were challenged with 1% test substance (w/v in PEG 400).

Following the challenge dose, 15 of 20 test animals showed positive dermal score (1), at 24 and 48 hours. Control animals showed no response (0). Iodomethane /Chloropicrin (25:75) is considered a contact sensitizer.

The Laboratory used DNCB and HCA for validation of the test system (historical control). The test response was appropriate (page 7) These studies were conducted within 6 months of the current study.

COMPLIANCE: The test meets GLP requirements. The study (870-2600) is Acceptable in accordance with the Sub Division F guide lines.

ACUTE TOX ONE-LINERS

1. DP BARCODE: D282076
2. PC CODE: 00011, 81501
3. CURRENT DATE: 7-10-02
4. TEST MATERIAL: Iodomethane /Chloropicrin (25:75)

Study/Species/Lab Study #/Date	MRID	Results	Tox. Cat.	Core Grade
Acute oral toxicity study/ rat/ Springborn Labs/ 3527.20/ 3-14-02	456412-01	LD_{50} males120 mg/kg, females 77 mg/kg	II	A
Acute dermal toxicity study/ rat/ Springborn Labs/ 3527.21/ 3-13-02	456412-02	Dermal LD > 2000 mg/kg	III	A
Acute inhalation study/ rat/ MPI Research/ 926-002/3-28-02	456412-03	LC_{50} is 0.21 mg/L	II	A
Primary skin irritation /rabbit/ Springborn/ 3527.23/ 2-26-02	456412-04	corrosive	I	A
Dermal sensitization/ g. pig/ Springborn Labs/ 3527.30/ 2-26-02	456412-05	contact sensitizer	-	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, V = Self Validated

Pages 90- 101 Access to FIFRA Registration Data is restricted under FIFRA section 10(g)

Fee for Service

This package includes the following	for Division
X New Registration	X RD
Amendment	AD
Waiver Request	BPPD
Voluntary Payment Request	

Receipt Nos. S- 771561

Product/Risk Manager: 21

EPA File Symbol/Reg. No. 66330-LT

Pin-Punch Date: 12/8/04

Action Code:

Requested: P31

Granted: R01.4 Amount due: $ 4000

VolPay Reduction:

Original Decision #:

___% D-

Parent/Child Decisions:

Parent 66330-UK

Reviewer: Linda Date: 1/5/05

Remarks:

link to D-219256-66330-UK

FFS cover sheet revision 4A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 13, 2004

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

ARVESTA CORPORATION
100 FIRST STREET, SUITE 1700
SAN FRANCISCO, CA 94105

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your submittal of 08-DEC-04. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your data submittal was found to be partially in compliance with the standards for submission of data contained in PR Notice 86-5, with the exceptions noted below. A copy of your transmittal bibliography is enclosed, annotated with the Master Record ID's (MRIDs) assigned to each document accepted. Please use these numbers in all future references to these documents.

If deficiencies were found which apply to individual accepted studies, they are listed below following the applicable MRID. Any document which has been assigned a MRID has been accepted under PR Notice 86-5. If any comments related to a MRID appear on this report, they are provided for your information and reference when preparing future submissions. Some individual documents were not acceptable, and all copies are being returned to you for correction for the reasons indicated below.

These rejected studies have been assigned separate identification numbers which are annotated on both the enclosed bibliography and the rejected document labels.

The rejected studies and their deficiencies are described below.

Rejected Study [01]:

* A statement of compliance or non-compliance with the Good Laboratory Practices Standards contained in 40CFR160 is required for all studies (except rangefinding studies and supplements to previously submittedstudies) submitted to EPA. This statement must appearas page 3 of all studies, and must be signed and dated by the study sponsor, the study submitter, and the study director. Please see 40 CFR 160.12 for specific guidance.

464227-00

Arvesta

December 03, 2004

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9880
www.arvesta.com

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: Midas 50:50 (EPA Reg. No. 66330-??)
Submission for registration of new formulation
Waiver and rationale for waiver of acute toxicology studies

Dear Ms Waller:

Included with this cover letter is a submission for the registration of a new end-use product, MIDAS 50:50. MIDAS 50:50 contains the currently registered active ingredient **chloropicrin** (50.0 %) and an active ingredient, **iodomethane technical**, currently under review (50%). All uses of this new formulation are already common to those of the previously submitted products. There are no food uses.

With respect to PRIA and the fee associated with this submission, we believe the appropriate review/fee category is as follows:

R31: New product; non fast track; Fee: $4,000.00

The following data and documents are enclosed:

Volume 1. Administrative Volume.

1. The present cover letter;
2. EPA Form 8570-1: Application for Registration;
3. EPA Form 8570-4: Confidential Statement of Formula;
4. **Midas 50:50** Proposed Label (5 copies);
5. EPA Form 8570-34: Certification with Respect to Citation of Data;
6. EPA Data Matrix; and
7. Transmittal document.

The following volumes are submitted in triplicate:

Volume 98: U.S. EPA Product Properties Test Guidelines - Group A and B of TM-42502 MIDAS 50:50.

Volume 99. Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge.

Waiver request overview:

EPA is currently reviewing the submissions for registration of two iodomethane end-use products, MIDAS 98:2 containing 98% iodomethane and 2% chloropicrin as a warning agent, and MIDAS 25:75, containing 25% iodomethane and 75% chloropicrin. Iodomethane is a new active ingredient while chloropicrin is currently registered by the agency. In previous discussions with EPA, Arvesta Corporation has discussed the viability of using the results of acute toxicity data from the two iodomethane end-use formulations currently under review, to "bridge" the acute toxicity data requirements for registration of additional iodomethane end-use formulations containing intermediate proportions of both active ingredients. In these discussions, the agency agreed, in principle, that the requirements for new acute toxicity data for the formulations could be waived if the precautionary statements for these new formulations were based on the most severe results from the acute toxicity studies that have been performed on the previously submitted product formulation.
Arvesta Corporation herein submits a request to have these requirements waived and includes a full rationale to support the request, consistent with our understanding with the agency.

Should you have any questions, please contact me at (415) 778 4844.

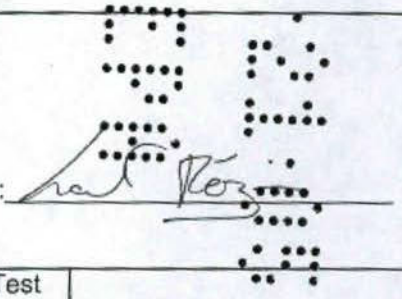
Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

TRANSMITTAL DOCUMENT FOR:
APPLICATION FOR REGISTRATION OF **MIDAS 50:50**
EPA File No. 66330-??
Submission of a new formulated product
December 03, 2004 -- Page 1 of 1

Data Submitter:
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

Attn: Laurent C. Mézin, Ph.D.
Tel: (415) 778 4844

Signature: 

Document	Volume No.	Test Subs.	MRID No.
ADMINISTRATIVE VOLUME			
Cover letter		n/a	
Transmittal Document		n/a	
VOLUME 99			
U.S. EPA Product Properties Test Guidelines - Group A and B of TM-42502 MIDAS 50:50	98	EUP	**Reject (01)**
VOLUME 100			
Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge	99	EUP	**46422702**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Date: 1/11/2005
Dr. Laurent C. Mezin
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

JAN 1 1 2004

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Subject: EPA Reg. No.66330-LT
Midas 50:50

Dear Dr.Mezin:

Please find attached a copy of the Report of Analysis for Compliance with PR Notice 86-5. Your data have been assigned the Master Record Identification (MRID) numbers listed on the attached pages.

For those volumes which failed the PR Notice 86-5 screen please correct the deficiencies and resubmit the volumes to the Agency **within 2 to 3 days**. Include the following Decision Number on the cover page with the word "Resubmission" to identify the data.

Decision # D352492
Resubmission

If you cannot meet this time frame, please contact me to discuss the date on which you expect to return the corrected data. You may contact me at (703) 308-9353 to discuss your submission deficiencies. My fax number is (703) 308-1825.

Sincerely,

Summer Gardner-Jenkins

Summer Gardner-Jenkins
Screening Team
Fungicide Branch
Registration Division (7505C)

Attachment

Date Branch Rec'd 12/15/04 Fax No. (415)284-9883 Contact: Dr. Mezin

Arvesta

100 First Street, Suite 1700
San Francisco, CA 94105
Phone (415) 536-3480
Fax (415) 284-9884

FACSIMILE TRANSMISSION

TO:		FROM:	
	U.S. EPA	**Name:**	Laurent Mézin
Attention:	**Summer Gardner-Jenkins**	**cc:**	
Fax#:	703 308 1825		
Number of pages (including cover): 4		**Date:**	Jan. 14, 2005

Resubmission: EPA Reg. # 66330-LT
Iodomethane updated GLP pages – Decision # D352492

Dear Summer:

Please find attached the three updated GLP statement pages for the study below. I am sending them in order of appearance in the report for pages 3 of the main report, the product identity section and the physical/chemical properties section.

U.S. EPA Product Properties Test Guidelines –
Group A and B of TM-42502 MIDAS 50:50

Thank you very much for giving me the opportunity to forward these pages to you directly. I appreciate your help and flexibility in this regard!

Please do not hesitate to contact me should you have any questions.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

JAN 19 2005

JAN 19 2004

This package of rejected data

has been **corrected**.

Please resubmit through

86-5 screen for MRID Nos.

Thank you,
Fungicide Branch

Susan

464489-00

Arvesta

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9881
www.arvesta.com

December 03, 2004

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: Midas 50:50 (EPA Reg. No. 66330-??)
Submission for registration of new formulation
Waiver and rationale for waiver of acute toxicology studies

Dear Ms Waller:

Included with this cover letter is a submission for the registration of a new end-use product, MIDAS 50:50. MIDAS 50:50 contains the currently registered active ingredient **chloropicrin** (50.0 %) and an active ingredient, **iodomethane technical**, currently under review (50%). All uses of this new formulation are already common to those of the previously submitted products. There are no food uses.

With respect to PRIA and the fee associated with this submission, we believe the appropriate review/fee category is as follows:

R31: New product; non fast track; Fee: $4,000.00

The following data and documents are enclosed:

Volume 1. Administrative Volume.

1. The present cover letter;
2. EPA Form 8570-1: Application for Registration;
3. EPA Form 8570-4: Confidential Statement of Formula;
4. **Midas 50:50** Proposed Label (5 copies);
5. EPA Form 8570-34: Certification with Respect to Citation of Data;
6. EPA Data Matrix; and
7. Transmittal document.

The following volumes are submitted in triplicate:

Volume 98: U.S. EPA Product Properties Test Guidelines - Group A and B of TM-42502 MIDAS 50:50.

Volume 99. Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge.

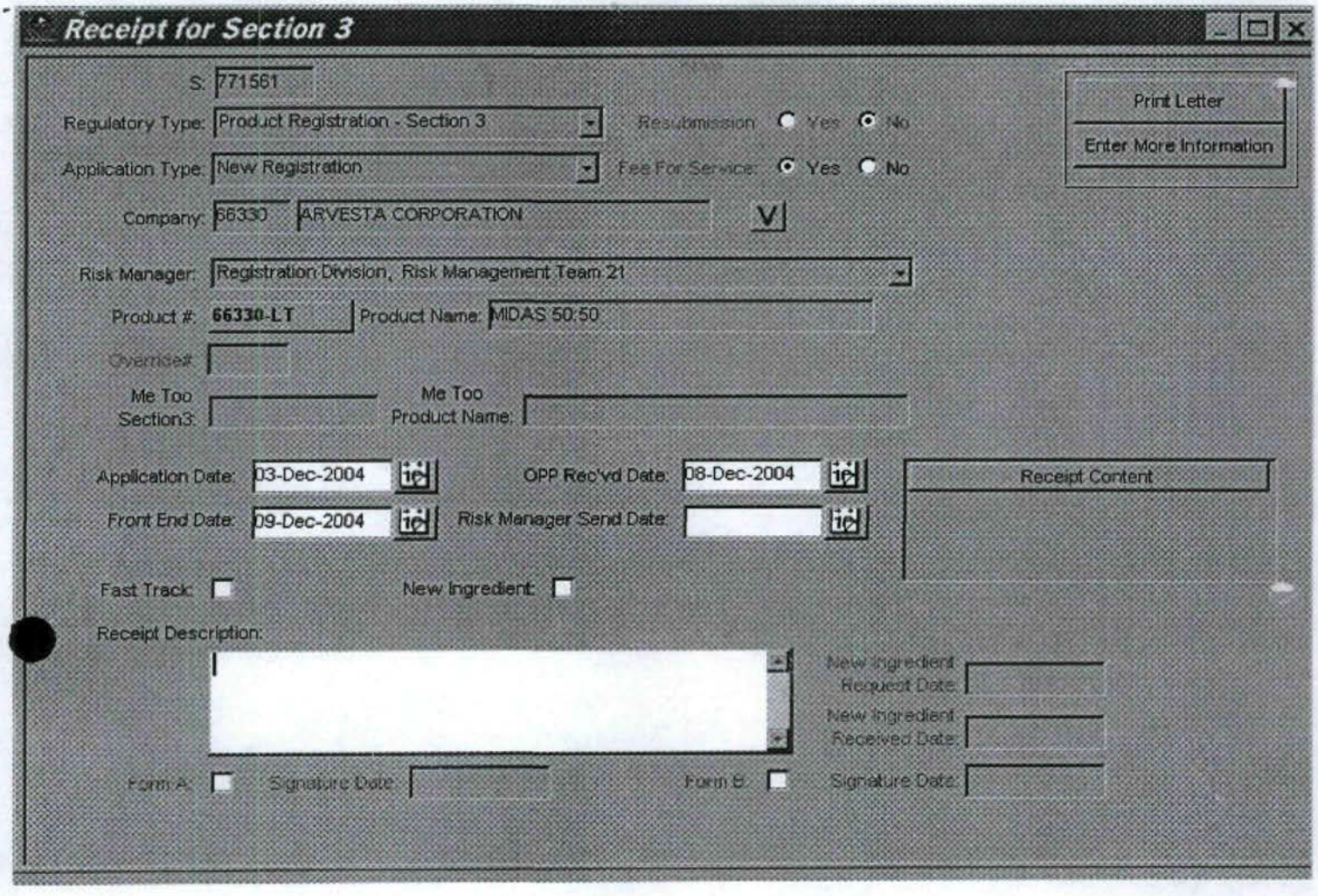
Waiver request overview:

EPA is currently reviewing the submissions for registration of two iodomethane end-use products, MIDAS 98:2 containing 98% iodomethane and 2% chloropicrin as a warning agent, and MIDAS 25:75, containing 25% iodomethane and 75% chloropicrin. Iodomethane is a new active ingredient while chloropicrin is currently registered by the agency. In previous discussions with EPA, Arvesta Corporation has discussed the viability of using the results of acute toxicity data from the two iodomethane end-use formulations currently under review, to "bridge" the acute toxicity data requirements for registration of additional iodomethane end-use formulations containing intermediate proportions of both active ingredients. In these discussions, the agency agreed, in principle, that the requirements for new acute toxicity data for the formulations could be waived if the precautionary statements for these new formulations were based on the most severe results from the acute toxicity studies that have been performed on the previously submitted product formulation.
Arvesta Corporation herein submits a request to have these requirements waived and includes a full rationale to support the request, consistent with our understanding with the agency.

Should you have any questions, please contact me at (415) 778 4844.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844



Dennis:

Do you have the product Chemistry & data? Also, I can fill you in on what we told them in our earlier meeting. Mary

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 5, 2005

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

PLEASE RETURN A COPY OF THIS LETTER WITH PAYMENT

OPP Decision Number: D-352492
EPA File Symbol or Registration Number: 66330-LT
Product Name: MIDAS 50:50
EPA Receipt Date: 08-Dec-2004
EPA Company Number: 66330
Company Name: ARVESTA CORPORATION

LAURENT C. MEZIN
ARVESTA CORPORATION
100 FIRST STREET, SUITE 1700
SAN FRANCISCO, CA 94105

SUBJECT: Receipt of Registration Application Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your application for registration. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: R01

NEW AI;FOOD USE;

Please remit payment in the amount of: $ 4,000 to:

By USPS:
USEPA Washington Finance Center
Pesticide Registration Service Fee
PO Box 360277
Pittsburgh, PA 15251

By Courier:
U.S. EPA Washington Finance Center
Pesticide Registration Service Fee
C/O Mellon Client Service Center
500 Ross Street, Room 670
Box 360277
Pittsburgh, PA 15251-6277
Attn: EPA Module Supervisor
Telephone: (412) 236-2294

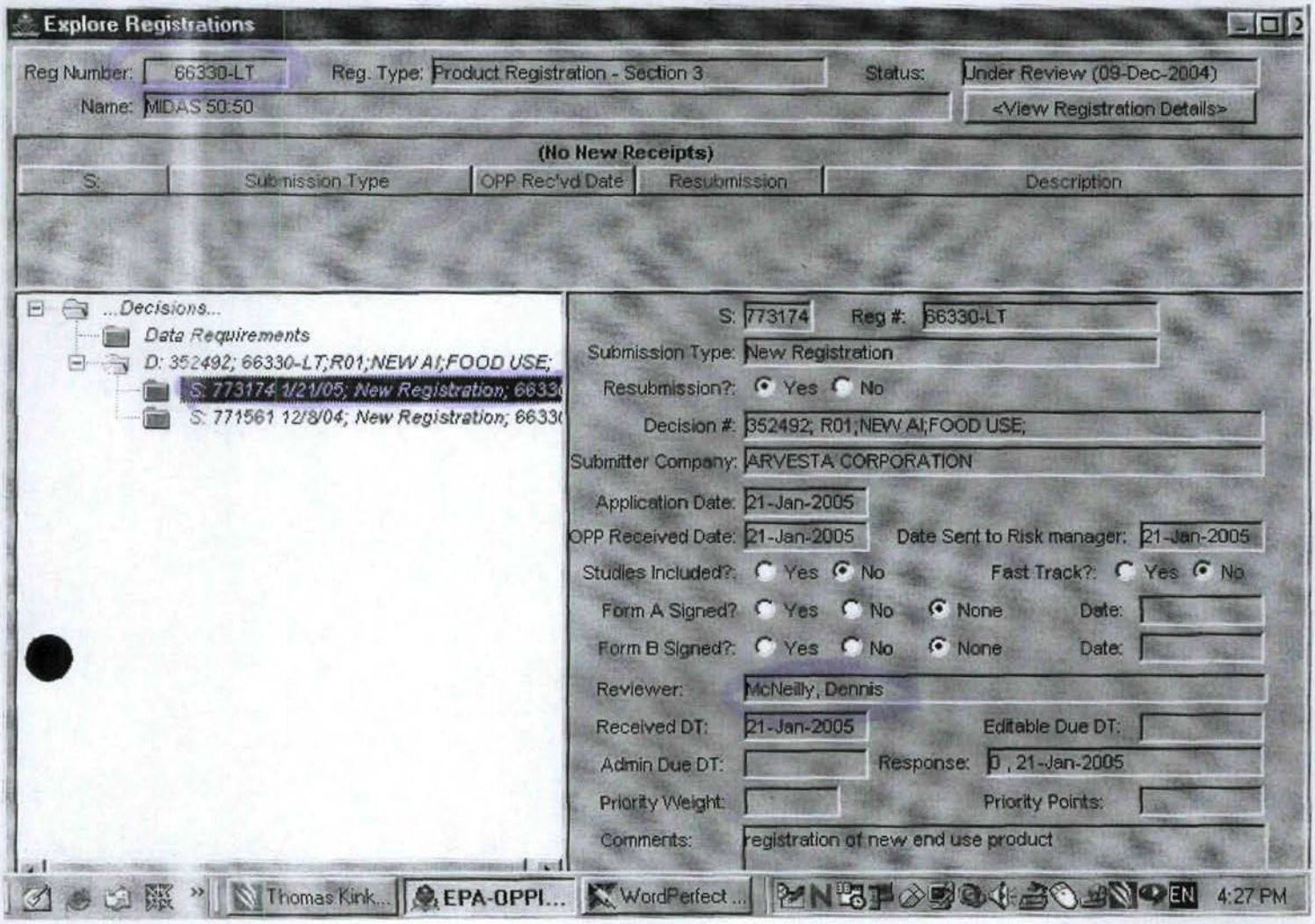
All payments must be in United States currency by check, bank draft, or money order drawn to the order of the Environmental Protection Agency. To ensure proper credit, please write the OPP DECISION NUMBER on your check, and enclose a copy of this letter with your payment.

You may be eligible for a full or partial waiver of the registration service fee if, for example, you qualify as a small business or are applying for a minor use, or if your application is solely associated with an IR-4 tolerance petition. Please be advised that if you intend to request a waiver, you must do so in writing within 15 days of receipt of this invoice instead of remitting the amount indicated above. OPP will not consider waiver requests after the registration service fee has been paid. Information regarding eligibility and how th request and document a fee waiver is available on the OPP Fee for Service web site at www.epa.gov/pesticides/fees.

If you have any questions, please contact the Pesticide Registration Service Fee Ombudsman at (703) 305-6249.

Sincerely,

Front End Processing Staff
Information Resources and Services Division



Mary was the Jacket

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 21, 2005

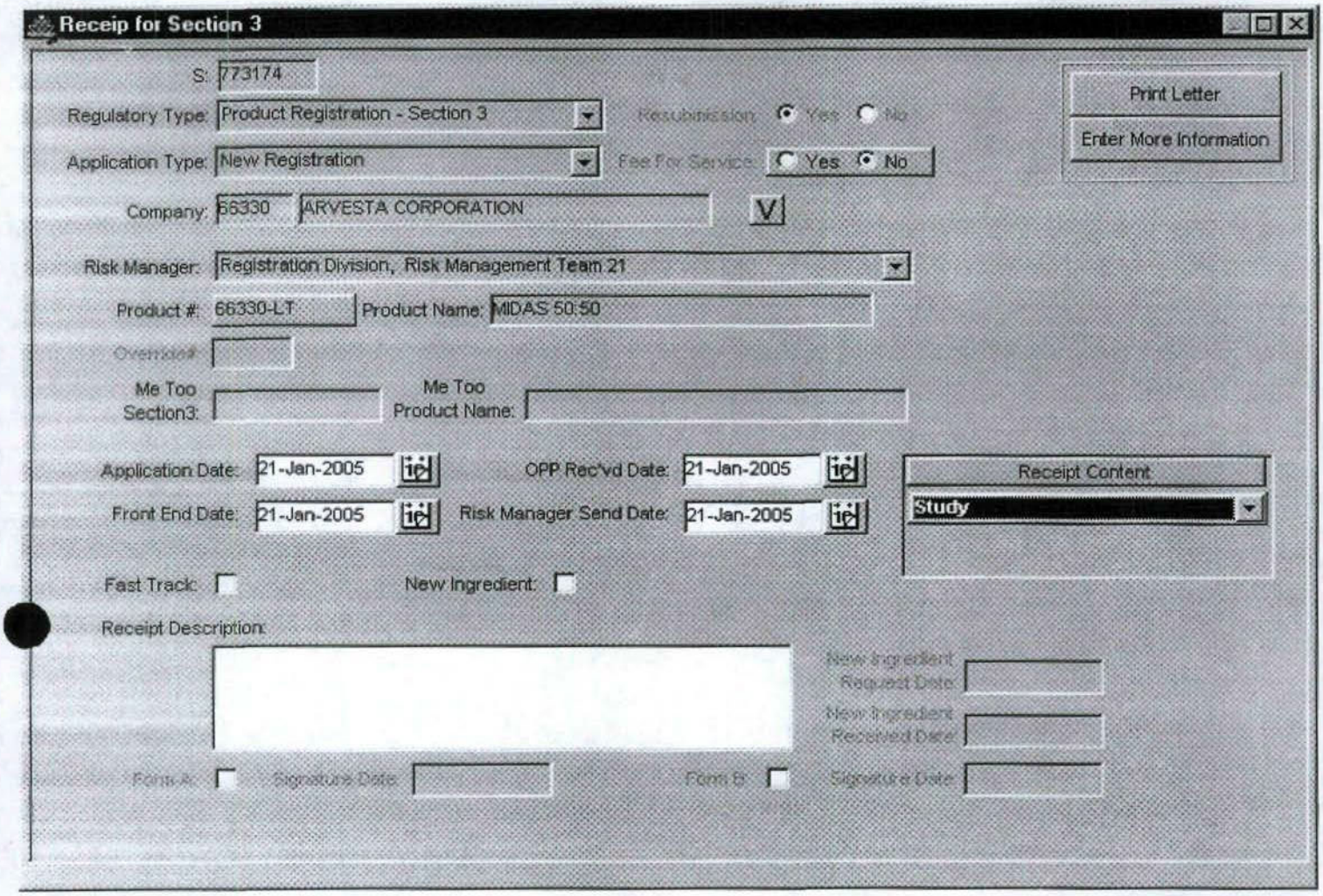
OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

ARVESTA CORPORATION
100 FIRST STREET, SUITE 1700
SAN FRANCISCO, CA 94105

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your submittal of 21-JAN-05. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.

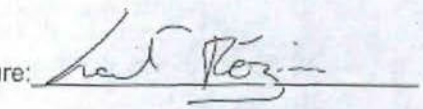

Receip for Section 3
S: 773174
Regulatory Type: Product Registration - Section 3
Resubmission: Yes No
Application Type: New Registration
Fee For Service: Yes No
Company: 66330 ARVESTA CORPORATION
Print Letter
Enter More Information
Risk Manager: Registration Division, Risk Management Team 21
Product #: 66330-LT
Product Name: MIDAS 50:50
Me Too Section3:
Me Too Product Name:
Application Date: 21-Jan-2005
OPP Rec'vd Date: 21-Jan-2005
Front End Date: 21-Jan-2005
Risk Manager Send Date: 21-Jan-2005
Receipt Content
Study
Fast Track:
New Ingredient:
Receipt Description:
New Ingredient Request Date:
New Ingredient Received Date:
Form A:
Signature Date:
Form B:
Signature Date:

Administrative Materials

TRANSMITTAL DOCUMENT FOR:
APPLICATION FOR REGISTRATION OF **MIDAS 50:50**
EPA File No. 66330-??
Submission of a new formulated product
December 03, 2004 -- Page 1 of 1

Data Submitter:
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

Attn: Laurent C. Mézin, Ph.D.
Tel: (415) 778 4844

Signature: 

Document	Volume No.	Test Subs.	MRID No.
ADMINISTRATIVE VOLUME			
Cover letter		n/a	
Transmittal Document		n/a	
VOLUME 99			
U.S. EPA Product Properties Test Guidelines - Group A and B of TM-42502 MIDAS 50:50	98	EUP	**46448901**
VOLUME 100			
Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge	99	EUP	**46422702**

Arvesta

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9883
www.arvesta.com

December 03, 2004

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: Midas 50:50 (EPA Reg. No. 66330-??)
Submission for registration of new formulation
Waiver and rationale for waiver of acute toxicology studies

Dear Ms Waller:

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6. EPA Data Matrix; and
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Should you have any questions, please contact me at (415) 778 4844.

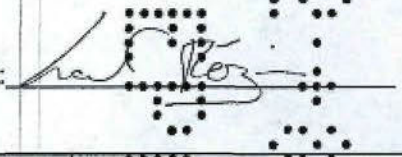
Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

TRANSMITTAL DOCUMENT FOR:
APPLICATION FOR REGISTRATION OF **MIDAS 50:50**
EPA File No. 66330-??
Submission of a new formulated product
December 03, 2004 -- Page 1 of 1

Data Submitter:
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

Attn: Laurent C. Mézin, Ph.D.
Tel: (415) 778 4844

Signature: 

Document	Volume No.	Test Subs.	MRID No.
ADMINISTRATIVE VOLUME			
Cover letter		n/a	
Transmittal Document		n/a	
VOLUME 99			
U.S. EPA Product Properties Test Guidelines - Group A and B of TM-42502 MIDAS 50:50	98	EUP	
VOLUME 100			
Iodomethane: Data Waiver Request Health Effects: Acute Toxicity Data Use Existing Studies as Surrogate/Bridge	99	EUP	

Please read instructions on reverse before completing form. Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☑ Registration
☐ Amendment
☐ Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
66330- LT	Mary Waller	☐ None ☑ Restricted
4. Company/Product (Name)	**PM#**	
MIDAS 50:50	21	

5. Name and Address of Applicant *(Include ZIP Code)*
ARVESTA Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
☐ *Check if this is a new address*

6. Expedited Reveiw. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. _____
Product Name _____

Section - II

☐ Amendment - Explain below.
☐ Resubmission in response to Agency letter dated _____
☐ Notification - Explain below.
☐ Final printed labels in repsonse to Agency letter dated _____
☐ "Me Too" Application.
☑ Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Submission of new formulated product containing 50% iodomethane and 50% chloropicrin.

PRIA category R31: New product; non-fast track

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	☑ Metal ☐ Plastic ☐ Glass ☐ Paper ☐ Other (Specify) _____
* *Certification must be submitted*	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☑ Label ☐ Container	25, 110 and 400 gallons	☑

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☑ Paper glued ☐ Stenciled ☐ Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Laurent C. Mézin, Ph.D.	Project Manager	(415) 778 4844

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowlingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

2. Signature	3. Title	
Laurent Mézin	Project Manager	
4. Typed Name	**5. Date**	
Laurent C. Mézin	December 03, 2004	

RESTRICTED USE PESTICIDE
DUE TO ACUTE TOXICITY
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

MIDAS™ 50:50

For Pre-Plant Fumigations of Fields Intended for Commercial Production of Various Crops, Ornamentals, Bushes, Trees and Vines for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases.

ACTIVE INGREDIENTS:

Iodomethane	50.00%
Chloropicrin	50.00%
TOTAL:	100.00%

One gallon weighs 15.9 pounds (7.95 pounds Iodomethane and 7.95 pounds Chloropicrin).

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detaille. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) assistance: Call CHEMTREC at 1-800-424-9300.

For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - ____ Net Contents _____
EPA Est. No.: ___ - __

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Corrosive to skin. Causes skin burns. May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. If clothing or absorbent materials (e.g. leather) have been drenched or heavily contaminated with this product, discard these items - do not reuse them. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains chloropicrin, a poisonous liquid or vapor. Inhalation of vapors may be fatal. Chloropicrin is readily identified by smell. Exposure to very low concentrations of vapor will cause irritation of eyes, nose and throat. Continued exposure after irritation is evident or higher concentrations may cause painful irritation to the eyes or temporary blindness. Liquid will cause chemical burns to skin or eyes. Do not get on skin, in eyes, or on clothing. Chloropicrin fumigant has the capacity to cause marked irritation to the upper respiratory tract and is a strong lachrymator (tear producing eye irritant). Low concentrations, below those necessary to cause serious systemic intoxication, are capable of causing severely painful eye irritation, hence will not be voluntarily tolerated. However, the effect may be so powerful that a person may

become temporarily blinded and panic-stricken and that in turn may lead to accidents.

AIR CONCENTRATION LEVEL

The acceptable air concentration for persons exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3) and the concentration for iodomethane is 0.19 ppm (1.10 mg/m^3). Persons involved in the application of MIDAS 50:50 or in reentry into treated fields may be exposed to the vapors of one or both of these active ingredients, dependent on such factors as the weather (e.g., temperature, wind, rain) and the condition of the soil. Air concentrations of chloropicrin and iodomethane are measured with direct reading devices, such as Kitigawa tubes, certified for chloropicrin or iodomethane. If the air concentration exceeds 0.1 ppm chloropicrin or 0.19 ppm iodomethane, an air-purifying respirator must be worn. If the air concentration exceeds 4 ppm chloropicrin or 5 ppm iodomethane, an air-supplying respirator or self-contained breathing apparatus must be worn.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- It is prudent to wear an appropriate respirator whenever applying chemical fumigants such as iodomethane and chloropicrin, however, for MIDAS 50:50, personal respiratory protection devices are only required under the following circumstances: If within the working area, at any time, the air concentration of chloropicrin exceeds 0.1 ppm or the air concentration of iodomethane exceeds 0.19 ppm, applicators and other handlers must wear either (a) a respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C), (b) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) or (c) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F)If the air concentration exceeds 4 ppm chloropicrin or 5 ppm iodomethane at any time, or if direct reading devices are not available for determining the air concentrations in the field, applicators and other handlers must wear (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) OR (b) a self-contained breathing apparatus (SCBA)(MSHA/NIOSH approval number prefix TC-13F).
- Drivers may use a closed cab equipped with an approved iodomethane/ chloropicrin adsorptive vapor filter in lieu of a personal respiratory protection device. This iodomethane/chloropicrin filter must be installed and changed according to the manufacturer's specifications.
- Drivers may use tractor mounted working area air fan dilution system in lieu of a personal respiratory protection device.
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

A respirator of the type specified above must be available during applications of MIDAS 50:50 and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

MIDAS 50:50 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of a type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials (e.g. leather), that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside, then wash thoroughly and put on clean clothing. If clothing is drenched or heavily contaminated with this product, discard clothing or absorbent materials (e.g. leather) - do not reuse them.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled

by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), restricted entry intervals, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

Entry Restrictions:
Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 48 hours after application and the air concentration of chloropicrin is measured to be less than 0.1 ppm. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification at Entrances to Treated Areas:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The signs must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane and Chloropicrin Fumigants In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post these fumigant warning signs instead of the WPS signs for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting

and removal. These fumigant warning signs shall be posted for no less than 48 hours.

Notification for Occupied Areas Adjacent to Treated Fields (Buffer Zones):
During the 24 hour period following application of MIDAS 50:50, it is required that the user prohibit persons from being present in areas adjacent to the treated field, as described in this section. These adjacent areas, where persons are restricted during the 24 hours following application, are called "Buffer Zones". The factors that trigger the need for Buffer Zones, and the size and shape of these Buffer Zones, are determined by following the Steps provided below.

The activities that are prohibited for 24 hours within a Buffer Zone include any activities that result in a person being present within the Buffer Zones for more than 1 hour during the 24 hour period following application. Examples of activities that are restricted are work or recreation within a Buffer Zone, or occupation of structures that are within a Buffer Zone for more than a total of 1 hour during the 24 hour period following application. Examples of activities that are not included are driving past the treated field or occupying a structure that is not within the Buffer Zone.

Follow these steps to determine whether a Buffer Zone must be established and determine what the size and shape of the Buffer Zone will be:

Step 1 – Need For Buffer Zone:

- If there is a reasonable expectation that persons will be present at locations adjacent to the treated field for more than a total of 1 hour during the 24 hour period following the application, then a Buffer Zone is required. Calculate the Buffer Zone distance (Step 2) then adjust for application rate (Step 3) and prevailing wind (Step 4), if applicable. Then re-determine the need for a Buffer Zone (Step 5).

- For all applications where a Buffer Zone is required, the minimum Buffer Zone size shall extend 25 feet from the edge of the treated field.

Step 2 – Determine Buffer Zone Distance:

- For Applications Up to 5 Acres per Day: The Buffer Zone shall extend to 25 feet from the edge of the treated field.

- For Applications Between 5 and 20 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  25 feet + ((Acres Treated Per Day – 5) x 15 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

- For Applications Between 20 and 40 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  250 feet + ((Acres Treated Per Day – 20) x 12.5 feet) =

Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

Step 3 – Adjust Buffer Zone to Account for Application Rate:

- The size of the Buffer Zone is reduced proportionally with the application rate, compared to the maximum rate of 350 lbs MIDAS 50:50 per treated acre. Use the following formula, utilizing the distances calculated in Step 2, to determine the adjusted size of the Buffer Zone:

  Distance From the Edge of the Treated Field (Adjusted for Acres Treated) x (Application Rate [lbs MIDAS 50:50 per treated acre]/350) = Distance From the Edge of the Treated Field (Adjusted for Application Rate)

- In no case shall this adjustment of the Buffer Zone result in a Buffer Zone that is smaller than the Minimum Buffer Zone size of 25 feet from the edge of the treated field.

Step 4 – Adjust Buffer Zone Configuration to Account for Prevailing Wind:

- When there is a clear historical expectation that a single, dominant prevailing wind direction will be present during the 24 hour period following the initiation of the application, the Buffer Zone can be limited to the semi circle downwind from the treated field.

Step 5 – Re-Determine Need For Buffer Zone:

- A Buffer Zone is not required if, after following the previous steps and determining the size and shape of the Buffer Zone, the locations identified in Step 1 (as being likely to be occupied for more than 1 hour during the 24 hours following the application) are not within the calculated Buffer Zone.

Applications shall not be made within 100 ft of occupied sensitive sites. Sensitive sites are schools, convalescent homes, and hospitals.

Users must ensure that persons are not present within the Buffer Zone for 24 hours following application.

PPE For Reentry During the Entry-Restricted Period:
Reentry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:

  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane and Chloropicrin Fumigants in Use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing all other workers information about precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film and the edges of the film buried under at least 4 inches of compacted soil before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.

- Remove the plastic tarps with a minimum of two trained people present during the operation.
- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration of chloropicrin is measured to be less than 0.1 ppm and no sooner than 48 hours following application. Signs must remain legible during entire posting period. Signs that identify the "buffer zone" adjacent to the treated field can be removed 24 hours following application.
- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 0.1 ppm chloropicrin in the air space around the treated site.
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 200 lbs (12.6 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that must only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: MIDAS 50:50 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium* and *Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, trees, vines, and to soils intended for strawberry nursery use.

Soil Fumigation using MIDAS 50:50 must be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed

seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants, the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply MIDAS 50:50 by shank fumigation Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of no less than 6 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately following the chisel, except when applied by deep-shank broadcast application, as detailed below under "Iodomethane Pre-Plant Field Fumigation Methods". Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 10 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold.

To minimize the potential for crop injury, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if MIDAS 50:50 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin used in MIDAS 50:50 is detectable.

CROP ROTATION RESTRICTIONS
Strawberries, fresh market tomatoes and peppers can be planted into treated soil as soon as crop safety can be assured and no sooner than 10 days after treatment. Crops other than strawberry, tomatoes, peppers require a 4 month plant back rotation restriction.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	MIDAS 50:50 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	200 – 350 lbs/A (12.6 – 22.0 gal/A)	10 – 14 days

Strawberry Nursery*	350 lbs/A (22.0 gal/A)	10 – 14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	200 – 350 lbs/A (12.6 – 22.0 gal/A)	10 – 14 days
Trees Vines	240 – 350 lbs/A (15.1 – 22.0 gal/A)	10 – 14 days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 300 lbs/A (18.9 gal/A) of MIDAS 50:50 be applied.

*** Tarps are not to be removed for at least 5 days following application. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation. Use the longer planting restriction periods under conditions of high soil moisture, heavy soils, or rain.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts.

FOR TREES AND VINES – PREPLANT DEEP INJECTION AUGER-PROBE TREATMENT: Use 2 lbs of MIDAS 50:50 per injection site, typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 30 days after the period of exposure. DO NOT PLANT if the odor of the chloropicrin used in MIDAS 50:50 is detectable.

DRIP IRRIGATION (CHEMIGATION):
Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigations system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments, should the need arise.
- A surfactant registered for use with chloropicrin is required (Arvesta TM-456 or an alternate product recommended by Arvesta Corporation must be used).
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

- "Public water system" means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, automatic valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.
- MIDAS 50:50 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.
- The dilution rate for drip-line fumigation is 1,400 - 2000 ppm. One gallon of MIDAS 50:50 in 2650 gallons of water is equivalent to 1,000 ppm. MIDAS 50:50 must be metered into the water.
- Soil must be in good tilth and condition. F, free of clods and un-decomposed soil material.
- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC must not be exposed to undiluted MIDAS 50:50 or more than 2,000 ppm MIDAS 50:50 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.
- In very sandy soils, apply MIDAS 50:50 when soil conditions throughout the treatment zone are near field capacity. When necessary, apply a pre-treatment amount of water to wet the bed and enhance even movement of the material through the soil profile at time of treatment.

- Apply MIDAS 50:50 with the surfactant Arvesta TM-456 or an alternate surfactant recommended by Arvesta Corporation to aid in the solubility of the compound in irrigation water, when applied alone or in combination with chloropicrin at a rate of 5 lbs of surfactant per 95 lbs of MIDAS 50:50.
- MIDAS 50:50 must be monitored as it enters the irrigation system and must pass through a static mixer, coarse filter, or fine strainer or equivalent devices to insure proper mixing before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs, discontinue the application immediately and cover the contaminated soil area with clean soil to absorb the material.
- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or injection pump.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphragm pump, venturi system or a pressure safe cylinder containing MIDAS 50:50 equipped with a metering valve and flow meter.
- Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of MIDAS 50:50. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW MIDAS 50:50 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 10 days after fumigation. Then proceed with normal agricultural practices normal for crop management activities.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS:

For best results, fumigations with MIDAS 50:50 shall be performed in accordance with the following application techniques. Consult with your regional agricultural advisor or Arvesta representative regarding other techniques that represent best management practices in your area.

Tarpaulin/Shallow/Broadcast

- Use either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller.
- Injection depth between 6and 15 inches.
- Injection spacing of 12 inches or less.

- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
    - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
    - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of chloropicrin is readily evident by onset of eye irritation or odor.
    - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Rearward-curved (swept-back) chisels with either:
    - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
    - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
    - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth of between 6 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing of 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
    - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
    - Be at least 14 days. If this option is chosen, the chloropicrin air concentration underneath the tarpaulin must test less than 0.1 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Forward-curved chisels with either:
  - An air fan dilution system on the application tractor; or
  - Closing shoes and compaction roller.
- Injection depth of at least 18inches.
- Injection spacing of 68inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of chloropicrin is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Forward-curved chisel used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing of 66 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using chloropicrin or any other fumigant or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane or methyl bromide per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.
2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.
3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

RESTRICTED USE PESTICIDE
DUE TO ACUTE TOXICITY

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

MIDAS™ 50:50

For Pre-Plant Fumigations of Fields Intended for Commercial Production of Various Crops, Ornamentals, Bushes, Trees and Vines for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases.

ACTIVE INGREDIENTS:

Iodomethane	50.00%
Chloropicrin	50.00%
TOTAL:	100.00%

One gallon weighs 15.9 pounds (7.95 pounds Iodomethane and 7.95 pounds Chloropicrin).

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detaille. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) assistance: Call CHEMTREC at 1-800-424-9300.

For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - ____ Net Contents _____
EPA Est. No.: ___ - __

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Corrosive to skin. Causes skin burns. May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. If clothing or absorbent materials (e.g. leather) have been drenched or heavily contaminated with this product, discard these items - do not reuse them. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains chloropicrin, a poisonous liquid or vapor. Inhalation of vapors may be fatal. Chloropicrin is readily identified by smell. Exposure to very low concentrations of vapor will cause irritation of eyes, nose and throat. Continued exposure after irritation is evident or higher concentrations may cause painful irritation to the eyes or temporary blindness. Liquid will cause chemical burns to skin or eyes. Do not get on skin, in eyes, or on clothing. Chloropicrin fumigant has the capacity to cause marked irritation to the upper respiratory tract and is a strong lachrymator (tear producing eye irritant). Low concentrations, below those necessary to cause serious systemic intoxication, are capable of causing severely painful eye irritation, hence will not be voluntarily tolerated. However, the effect may be so powerful that a person may

become temporarily blinded and panic-stricken and that in turn may lead to accidents.

AIR CONCENTRATION LEVEL

The acceptable air concentration for persons exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3) and the concentration for iodomethane is 0.19 ppm (1.10 mg/m^3). Persons involved in the application of MIDAS 50:50 or in reentry into treated fields may be exposed to the vapors of one or both of these active ingredients, dependent on such factors as the weather (e.g., temperature, wind, rain) and the condition of the soil. Air concentrations of chloropicrin and iodomethane are measured with direct reading devices, such as Kitigawa tubes, certified for chloropicrin or iodomethane. If the air concentration exceeds 0.1 ppm chloropicrin or 0.19 ppm iodomethane, an air-purifying respirator must be worn. If the air concentration exceeds 4 ppm chloropicrin or 5 ppm iodomethane, an air-supplying respirator or self-contained breathing apparatus must be worn.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- It is prudent to wear an appropriate respirator whenever applying chemical fumigants such as iodomethane and chloropicrin, however, for MIDAS 50:50, personal respiratory protection devices are only required under the following circumstances: If within the working area, at any time, the air concentration of chloropicrin exceeds 0.1 ppm or the air concentration of iodomethane exceeds 0.19 ppm, applicators and other handlers must wear either (a) a respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C), (b) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) or (c) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F)If the air concentration exceeds 4 ppm chloropicrin or 5 ppm iodomethane at any time, or if direct reading devices are not available for determining the air concentrations in the field, applicators and other handlers must wear (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) OR (b) a self-contained breathing apparatus (SCBA)(MSHA/NIOSH approval number prefix TC-13F).
- Drivers may use a closed cab equipped with an approved iodomethane/ chloropicrin adsorptive vapor filter in lieu of a personal respiratory protection device. This iodomethane/chloropicrin filter must be installed and changed according to the manufacturer's specifications.
- Drivers may use tractor mounted working area air fan dilution system in lieu of a personal respiratory protection device.
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

A respirator of the type specified above must be available during applications of MIDAS 50:50 and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

MIDAS 50:50 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of a type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials (e.g. leather), that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside, then wash thoroughly and put on clean clothing. If clothing is drenched or heavily contaminated with this product, discard clothing or absorbent materials (e.g. leather) - do not reuse them.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled

by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), restricted entry intervals, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

Entry Restrictions:
Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 48 hours after application and the air concentration of chloropicrin is measured to be less than 0.1 ppm. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification at Entrances to Treated Areas:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The signs must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane and Chloropicrin Fumigants In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post these fumigant warning signs instead of the WPS signs for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting

and removal. These fumigant warning signs shall be posted for no less than 48 hours.

Notification for Occupied Areas Adjacent to Treated Fields (Buffer Zones):
During the 24 hour period following application of MIDAS 50:50, it is required that the user prohibit persons from being present in areas adjacent to the treated field, as described in this section. These adjacent areas, where persons are restricted during the 24 hours following application, are called "Buffer Zones". The factors that trigger the need for Buffer Zones, and the size and shape of these Buffer Zones, are determined by following the Steps provided below.

The activities that are prohibited for 24 hours within a Buffer Zone include any activities that result in a person being present within the Buffer Zones for more than 1 hour during the 24 hour period following application. Examples of activities that are restricted are work or recreation within a Buffer Zone, or occupation of structures that are within a Buffer Zone for more than a total of 1 hour during the 24 hour period following application. Examples of activities that are not included are driving past the treated field or occupying a structure that is not within the Buffer Zone.

Follow these steps to determine whether a Buffer Zone must be established and determine what the size and shape of the Buffer Zone will be:

Step 1 – Need For Buffer Zone:

- If there is a reasonable expectation that persons will be present at locations adjacent to the treated field for more than a total of 1 hour during the 24 hour period following the application, then a Buffer Zone is required. Calculate the Buffer Zone distance (Step 2) then adjust for application rate (Step 3) and prevailing wind (Step 4), if applicable. Then re-determine the need for a Buffer Zone (Step 5).

- For all applications where a Buffer Zone is required, the minimum Buffer Zone size shall extend 25 feet from the edge of the treated field.

Step 2 – Determine Buffer Zone Distance:

- For Applications Up to 5 Acres per Day: The Buffer Zone shall extend to 25 feet from the edge of the treated field.

- For Applications Between 5 and 20 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  25 feet + ((Acres Treated Per Day – 5) x 15 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

- For Applications Between 20 and 40 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  250 feet + ((Acres Treated Per Day – 20) x 12.5 feet) =

Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

Step 3 – Adjust Buffer Zone to Account for Application Rate:

- The size of the Buffer Zone is reduced proportionally with the application rate, compared to the maximum rate of 350 lbs MIDAS 50:50 per treated acre. Use the following formula, utilizing the distances calculated in Step 2, to determine the adjusted size of the Buffer Zone:

  Distance From the Edge of the Treated Field (Adjusted for Acres Treated) x (Application Rate [lbs MIDAS 50:50 per treated acre]/350) = Distance From the Edge of the Treated Field (Adjusted for Application Rate)

- In no case shall this adjustment of the Buffer Zone result in a Buffer Zone that is smaller than the Minimum Buffer Zone size of 25 feet from the edge of the treated field.

Step 4 – Adjust Buffer Zone Configuration to Account for Prevailing Wind:

- When there is a clear historical expectation that a single, dominant prevailing wind direction will be present during the 24 hour period following the initiation of the application, the Buffer Zone can be limited to the semi circle downwind from the treated field.

Step 5 – Re-Determine Need For Buffer Zone:

- A Buffer Zone is not required if, after following the previous steps and determining the size and shape of the Buffer Zone, the locations identified in Step 1 (as being likely to be occupied for more than 1 hour during the 24 hours following the application) are not within the calculated Buffer Zone.

Applications shall not be made within 100 ft of occupied sensitive sites. Sensitive sites are schools, convalescent homes, and hospitals.

Users must ensure that persons are not present within the Buffer Zone for 24 hours following application.

PPE For Reentry During the Entry-Restricted Period:
Reentry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:

  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane and Chloropicrin Fumigants in Use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing all other workers information about precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film and the edges of the film buried under at least 4 inches of compacted soil before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.

- Remove the plastic tarps with a minimum of two trained people present during the operation.
- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration of chloropicrin is measured to be less than 0.1 ppm and no sooner than 48 hours following application. Signs must remain legible during entire posting period. Signs that identify the "buffer zone" adjacent to the treated field can be removed 24 hours following application.
- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 0.1 ppm chloropicrin in the air space around the treated site.
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 200 lbs (12.6 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that must only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: MIDAS 50:50 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium* and *Rhizoctonia*. It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, trees, vines, and to soils intended for strawberry nursery use.

Soil Fumigation using MIDAS 50:50 must be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed

seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants, the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply MIDAS 50:50 by shank fumigation Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of no less than 6 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately following the chisel, except when applied by deep-shank broadcast application, as detailed below under "Iodomethane Pre-Plant Field Fumigation Methods". Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 10 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold.

To minimize the potential for crop injury, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if MIDAS 50:50 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin used in MIDAS 50:50 is detectable.

CROP ROTATION RESTRICTIONS
Strawberries, fresh market tomatoes and peppers can be planted into treated soil as soon as crop safety can be assured and no sooner than 10 days after treatment. Crops other than strawberry, tomatoes, peppers require a 4 month plant back rotation restriction.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	MIDAS 50:50 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	200 – 350 lbs/A (12.6 – 22.0 gal/A)	10 – 14 days

Strawberry Nursery*	350 lbs/A (22.0 gal/A)	10 – 14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	200 – 350 lbs/A (12.6 – 22.0 gal/A)	10 – 14 days
Trees Vines	240 – 350 lbs/A (15.1 – 22.0 gal/A)	10 – 14 days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 300 lbs/A (18.9 gal/A) of MIDAS 50:50 be applied.

*** Tarps are not to be removed for at least 5 days following application. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation. Use the longer planting restriction periods under conditions of high soil moisture, heavy soils, or rain.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts.

FOR TREES AND VINES – PREPLANT DEEP INJECTION AUGER-PROBE TREATMENT: Use 2 lbs of MIDAS 50:50 per injection site, typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 30 days after the period of exposure. DO NOT PLANT if the odor of the chloropicrin used in MIDAS 50:50 is detectable.

DRIP IRRIGATION (CHEMIGATION):
Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigations system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments, should the need arise.
- A surfactant registered for use with chloropicrin is required (Arvesta TM-456 or an alternate product recommended by Arvesta Corporation must be used).
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

- "Public water system" means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, automatic valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.
- MIDAS 50:50 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.
- The dilution rate for drip-line fumigation is 1,400 - 2000 ppm. One gallon of MIDAS 50:50 in 2650 gallons of water is equivalent to 1,000 ppm. MIDAS 50:50 must be metered into the water.
- Soil must be in good tilth and condition. F, free of clods and un-decomposed soil material.
- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC must not be exposed to undiluted MIDAS 50:50 or more than 2,000 ppm MIDAS 50:50 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.
- In very sandy soils, apply MIDAS 50:50 when soil conditions throughout the treatment zone are near field capacity. When necessary, apply a pre-treatment amount of water to wet the bed and enhance even movement of the material through the soil profile at time of treatment.

- Apply MIDAS 50:50 with the surfactant Arvesta TM-456 or an alternate surfactant recommended by Arvesta Corporation to aid in the solubility of the compound in irrigation water, when applied alone or in combination with chloropicrin at a rate of 5 lbs of surfactant per 95 lbs of MIDAS 50:50.
- MIDAS 50:50 must be monitored as it enters the irrigation system and must pass through a static mixer, coarse filter, or fine strainer or equivalent devices to insure proper mixing before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs, discontinue the application immediately and cover the contaminated soil area with clean soil to absorb the material.
- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or injection pump.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphragm pump, venturi system or a pressure safe cylinder containing MIDAS 50:50 equipped with a metering valve and flow meter.
- Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of MIDAS 50:50. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW MIDAS 50:50 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 10 days after fumigation. Then proceed with normal agricultural practices normal for crop management activities.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS:

For best results, fumigations with MIDAS 50:50 shall be performed in accordance with the following application techniques. Consult with your regional agricultural advisor or Arvesta representative regarding other techniques that represent best management practices in your area.

Tarpaulin/Shallow/Broadcast

- Use either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller.
- Injection depth between 6and 15 inches.
- Injection spacing of 12 inches or less.

- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
    - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
    - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of chloropicrin is readily evident by onset of eye irritation or odor.
    - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Rearward-curved (swept-back) chisels with either:
    - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
    - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
    - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth of between 6 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing of 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
    - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
    - Be at least 14 days. If this option is chosen, the chloropicrin air concentration underneath the tarpaulin must test less than 0.1 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Forward-curved chisels with either:
  - An air fan dilution system on the application tractor; or
  - Closing shoes and compaction roller.
- Injection depth of at least 18inches.
- Injection spacing of 68inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of chloropicrin is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Forward-curved chisel used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing of 66 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using chloropicrin or any other fumigant or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane or methyl bromide per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.
2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.
3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

MIDAS is a trademark of Arvesta Corporation

RESTRICTED USE PESTICIDE
DUE TO ACUTE TOXICITY
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

MIDAS™ 50:50

For Pre-Plant Fumigations of Fields Intended for Commercial Production of Various Crops, Ornamentals, Bushes, Trees and Vines for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases.

ACTIVE INGREDIENTS:

Iodomethane	50.00%
Chloropicrin	50.00%
TOTAL:	100.00%

One gallon weighs 15.9 pounds (7.95 pounds Iodomethane and 7.95 pounds Chloropicrin).

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detaille. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) assistance: Call CHEMTREC at 1-800-424-9300.

For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - ____ Net Contents _____
EPA Est. No.: ___ - __

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Corrosive to skin. Causes skin burns. May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. If clothing or absorbent materials (e.g. leather) have been drenched or heavily contaminated with this product, discard these items - do not reuse them. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains chloropicrin, a poisonous liquid or vapor. Inhalation of vapors may be fatal. Chloropicrin is readily identified by smell. Exposure to very low concentrations of vapor will cause irritation of eyes, nose and throat. Continued exposure after irritation is evident or higher concentrations may cause painful irritation to the eyes or temporary blindness. Liquid will cause chemical burns to skin or eyes. Do not get on skin, in eyes, or on clothing. Chloropicrin fumigant has the capacity to cause marked irritation to the upper respiratory tract and is a strong lachrymator (tear producing eye irritant). Low concentrations, below those necessary to cause serious systemic intoxication, are capable of causing severely painful eye irritation, hence will not be voluntarily tolerated. However, the effect may be so powerful that a person may

become temporarily blinded and panic-stricken and that in turn may lead to accidents.

AIR CONCENTRATION LEVEL

The acceptable air concentration for persons exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3) and the concentration for iodomethane is 0.19 ppm (1.10 mg/m^3). Persons involved in the application of MIDAS 50:50 or in reentry into treated fields may be exposed to the vapors of one or both of these active ingredients, dependent on such factors as the weather (e.g., temperature, wind, rain) and the condition of the soil. Air concentrations of chloropicrin and iodomethane are measured with direct reading devices, such as Kitigawa tubes, certified for chloropicrin or iodomethane. If the air concentration exceeds 0.1 ppm chloropicrin or 0.19 ppm iodomethane, an air-purifying respirator must be worn. If the air concentration exceeds 4 ppm chloropicrin or 5 ppm iodomethane, an air-supplying respirator or self-contained breathing apparatus must be worn.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- It is prudent to wear an appropriate respirator whenever applying chemical fumigants such as iodomethane and chloropicrin, however, for MIDAS 50:50, personal respiratory protection devices are only required under the following circumstances: If within the working area, at any time, the air concentration of chloropicrin exceeds 0.1 ppm or the air concentration of iodomethane exceeds 0.19 ppm, applicators and other handlers must wear either (a) a respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C), (b) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) or (c) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F)If the air concentration exceeds 4 ppm chloropicrin or 5 ppm iodomethane at any time, or if direct reading devices are not available for determining the air concentrations in the field, applicators and other handlers must wear (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) OR (b) a self-contained breathing apparatus (SCBA)(MSHA/NIOSH approval number prefix TC-13F).
- Drivers may use a closed cab equipped with an approved iodomethane/ chloropicrin adsorptive vapor filter in lieu of a personal respiratory protection device. This iodomethane/chloropicrin filter must be installed and changed according to the manufacturer's specifications.
- Drivers may use tractor mounted working area air fan dilution system in lieu of a personal respiratory protection device.
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

A respirator of the type specified above must be available during applications of MIDAS 50:50 and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

MIDAS 50:50 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of a type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials (e.g. leather), that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside, then wash thoroughly and put on clean clothing. If clothing is drenched or heavily contaminated with this product, discard clothing or absorbent materials (e.g. leather) - do not reuse them.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled

by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), restricted entry intervals, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

Entry Restrictions:
Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 48 hours after application and the air concentration of chloropicrin is measured to be less than 0.1 ppm. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification at Entrances to Treated Areas:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The signs must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane and Chloropicrin Fumigants In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post these fumigant warning signs instead of the WPS signs for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting

and removal. These fumigant warning signs shall be posted for no less than 48 hours.

Notification for Occupied Areas Adjacent to Treated Fields (Buffer Zones):
During the 24 hour period following application of MIDAS 50:50, it is required that the user prohibit persons from being present in areas adjacent to the treated field, as described in this section. These adjacent areas, where persons are restricted during the 24 hours following application, are called "Buffer Zones". The factors that trigger the need for Buffer Zones, and the size and shape of these Buffer Zones, are determined by following the Steps provided below.

The activities that are prohibited for 24 hours within a Buffer Zone include any activities that result in a person being present within the Buffer Zones for more than 1 hour during the 24 hour period following application. Examples of activities that are restricted are work or recreation within a Buffer Zone, or occupation of structures that are within a Buffer Zone for more than a total of 1 hour during the 24 hour period following application. Examples of activities that are not included are driving past the treated field or occupying a structure that is not within the Buffer Zone.

Follow these steps to determine whether a Buffer Zone must be established and determine what the size and shape of the Buffer Zone will be:

Step 1 – Need For Buffer Zone:

- If there is a reasonable expectation that persons will be present at locations adjacent to the treated field for more than a total of 1 hour during the 24 hour period following the application, then a Buffer Zone is required. Calculate the Buffer Zone distance (Step 2) then adjust for application rate (Step 3) and prevailing wind (Step 4), if applicable. Then re-determine the need for a Buffer Zone (Step 5).

- For all applications where a Buffer Zone is required, the minimum Buffer Zone size shall extend 25 feet from the edge of the treated field.

Step 2 – Determine Buffer Zone Distance:

- For Applications Up to 5 Acres per Day: The Buffer Zone shall extend to 25 feet from the edge of the treated field.

- For Applications Between 5 and 20 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  25 feet + ((Acres Treated Per Day – 5) x 15 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

- For Applications Between 20 and 40 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  250 feet + ((Acres Treated Per Day – 20) x 12.5 feet) =

Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

Step 3 – Adjust Buffer Zone to Account for Application Rate:

- The size of the Buffer Zone is reduced proportionally with the application rate, compared to the maximum rate of 350 lbs MIDAS 50:50 per treated acre. Use the following formula, utilizing the distances calculated in Step 2, to determine the adjusted size of the Buffer Zone:

  Distance From the Edge of the Treated Field (Adjusted for Acres Treated) x (Application Rate [lbs MIDAS 50:50 per treated acre]/350) = Distance From the Edge of the Treated Field (Adjusted for Application Rate)

- In no case shall this adjustment of the Buffer Zone result in a Buffer Zone that is smaller than the Minimum Buffer Zone size of 25 feet from the edge of the treated field.

Step 4 – Adjust Buffer Zone Configuration to Account for Prevailing Wind:

- When there is a clear historical expectation that a single, dominant prevailing wind direction will be present during the 24 hour period following the initiation of the application, the Buffer Zone can be limited to the semi circle downwind from the treated field.

Step 5 – Re-Determine Need For Buffer Zone:

- A Buffer Zone is not required if, after following the previous steps and determining the size and shape of the Buffer Zone, the locations identified in Step 1 (as being likely to be occupied for more than 1 hour during the 24 hours following the application) are not within the calculated Buffer Zone.

Applications shall not be made within 100 ft of occupied sensitive sites. Sensitive sites are schools, convalescent homes, and hospitals.

Users must ensure that persons are not present within the Buffer Zone for 24 hours following application.

PPE For Reentry During the Entry-Restricted Period:
Reentry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:

  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane and Chloropicrin Fumigants in Use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing all other workers information about precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film and the edges of the film buried under at least 4 inches of compacted soil before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.

- Remove the plastic tarps with a minimum of two trained people present during the operation.
- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration of chloropicrin is measured to be less than 0.1 ppm and no sooner than 48 hours following application. Signs must remain legible during entire posting period. Signs that identify the "buffer zone" adjacent to the treated field can be removed 24 hours following application.
- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 0.1 ppm chloropicrin in the air space around the treated site.
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 200 lbs (12.6 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that must only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: MIDAS 50:50 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium* and *Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, trees, vines, and to soils intended for strawberry nursery use.

Soil Fumigation using MIDAS 50:50 must be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed

seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants, the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply MIDAS 50:50 by shank fumigation Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of no less than 6 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately following the chisel, except when applied by deep-shank broadcast application, as detailed below under "Iodomethane Pre-Plant Field Fumigation Methods". Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 10 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold.

To minimize the potential for crop injury, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if MIDAS 50:50 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin used in MIDAS 50:50 is detectable.

CROP ROTATION RESTRICTIONS
Strawberries, fresh market tomatoes and peppers can be planted into treated soil as soon as crop safety can be assured and no sooner than 10 days after treatment. Crops other than strawberry, tomatoes, peppers require a 4 month plant back rotation restriction.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	MIDAS 50:50 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	200 – 350 lbs/A (12.6 – 22.0 gal/A)	10 – 14 days

Strawberry Nursery*	350 lbs/A (22.0 gal/A)	10 – 14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	200 – 350 lbs/A (12.6 – 22.0 gal/A)	10 – 14 days
Trees Vines	240 – 350 lbs/A (15.1 – 22.0 gal/A)	10 – 14 days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 300 lbs/A (18.9 gal/A) of MIDAS 50:50 be applied.

*** Tarps are not to be removed for at least 5 days following application. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation. Use the longer planting restriction periods under conditions of high soil moisture, heavy soils, or rain.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts.

FOR TREES AND VINES – PREPLANT DEEP INJECTION AUGER-PROBE TREATMENT: Use 2 lbs of MIDAS 50:50 per injection site, typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 30 days after the period of exposure. DO NOT PLANT if the odor of the chloropicrin used in MIDAS 50:50 is detectable.

DRIP IRRIGATION (CHEMIGATION):
Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigations system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments, should the need arise.
- A surfactant registered for use with chloropicrin is required (Arvesta TM-456 or an alternate product recommended by Arvesta Corporation must be used).
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

- "Public water system" means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, automatic valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.
- MIDAS 50:50 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.
- The dilution rate for drip-line fumigation is 1,400 - 2000 ppm. One gallon of MIDAS 50:50 in 2650 gallons of water is equivalent to 1,000 ppm. MIDAS 50:50 must be metered into the water.
- Soil must be in good tilth and condition. F, free of clods and un-decomposed soil material.
- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC must not be exposed to undiluted MIDAS 50:50 or more than 2,000 ppm MIDAS 50:50 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.
- In very sandy soils, apply MIDAS 50:50 when soil conditions throughout the treatment zone are near field capacity. When necessary, apply a pre-treatment amount of water to wet the bed and enhance even movement of the material through the soil profile at time of treatment.

- Apply MIDAS 50:50 with the surfactant Arvesta TM-456 or an alternate surfactant recommended by Arvesta Corporation to aid in the solubility of the compound in irrigation water, when applied alone or in combination with chloropicrin at a rate of 5 lbs of surfactant per 95 lbs of MIDAS 50:50.
- MIDAS 50:50 must be monitored as it enters the irrigation system and must pass through a static mixer, coarse filter, or fine strainer or equivalent devices to insure proper mixing before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs, discontinue the application immediately and cover the contaminated soil area with clean soil to absorb the material.
- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or injection pump.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphragm pump, venturi system or a pressure safe cylinder containing MIDAS 50:50 equipped with a metering valve and flow meter.
- Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of MIDAS 50:50. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW MIDAS 50:50 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 10 days after fumigation. Then proceed with normal agricultural practices normal for crop management activities.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS:

For best results, fumigations with MIDAS 50:50 shall be performed in accordance with the following application techniques. Consult with your regional agricultural advisor or Arvesta representative regarding other techniques that represent best management practices in your area.

Tarpaulin/Shallow/Broadcast

- Use either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller.
- Injection depth between 6and 15 inches.
- Injection spacing of 12 inches or less.

- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
    - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
    - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of chloropicrin is readily evident by onset of eye irritation or odor.
    - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Rearward-curved (swept-back) chisels with either:
    - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
    - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
    - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth of between 6 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing of 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
    - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
    - Be at least 14 days. If this option is chosen, the chloropicrin air concentration underneath the tarpaulin must test less than 0.1 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Forward-curved chisels with either:
  - An air fan dilution system on the application tractor; or
  - Closing shoes and compaction roller.
- Injection depth of at least 18inches.
- Injection spacing of 68inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of chloropicrin is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Forward-curved chisel used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing of 66 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using chloropicrin or any other fumigant or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane or methyl bromide per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.
2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.
3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

MIDAS is a trademark of Arvesta Corporation

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number	EPA Registration Number/File Symbol
ARVESTA Corporation; 100 First Street, Suite 1700; San Francisco, CA 94105	66330-
Active Ingredient(s) and/or representative test compound(s) Iodomethane and chloropicrin	Date December 03, 2004
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Terrestrial; non-food	Product Name MIDAS 50:50

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

SECTION I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).	☑ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

SECTION II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☐ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

SECTION III: CERTIFICATION

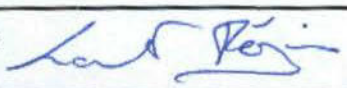
I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses .

I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (I) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

Signature	Date	Typed or Printed Name and Title
	12/03/04	Laurent C. Mézin

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DATA MATRIX

Date December 03, 2004			EPA Reg No./File Symbol 66330-		Page 0 of 2
Applicant's/Registrant's Name & Address ARVESTA CORPORATION 100 First Street, Suite 1700; San Francisco, CA 94105			Product MIDAS 50:50		
Ingredient					
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
See attached sheets	See attached sheets		See attached sheets		
Signature			Name and Title Laurent C. Mézin; Project Manager		Date Dec. 03, 2004

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DATA MATRIX

Date: November 21, 2004	**EPA Reg. No.:** 66330-
ARVESTA CORPORATION	**Product:**
100 First Street, Suite 1700; San Francisco CA 94105	MIDAS 50:50

Ingredient: 50% IODOMETHANE & 50% CHLOROPICRIN

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.0000	Product Chemistry		Arvesta Corporation	OWN	
830.1550	Product Identity and Composition		Arvesta Corporation	OWN	
830.1600	Description of Materials Used to Produce Product		Arvesta Corporation	OWN	
830.1650	Description of Formulation Process		Arvesta Corporation	OWN	
830.1670	Discussion of Formation of Impurities		Arvesta Corporation	OWN	
830.1700	Preliminary Analysis		Arvesta Corporation	OWN	
830.1750	Certified Limits		Arvesta Corporation	OWN	
830.1800	Enforcement of Analytical Method		Arvesta Corporation	OWN	
830.1900	Submittal of Standards		Arvesta Corporation	OWN	
830.6302	Color		Arvesta Corporation	OWN	
830.6303	Physical State		Arvesta Corporation	OWN	
830.6304	Odor		Arvesta Corporation	OWN	
830.6314	Oxidation/Reduction: Chemical Compatibility		Arvesta Corporation	OWN	
830.6315	Flammability		Arvesta Corporation	OWN	
830.6316	Explodability		Arvesta Corporation	OWN	
830.6317	Storage Stability		Arvesta Corporation	OWN	

Signature	Name and Title	Date
	Laurent C. Mézin; Project Manager	Dec. 03, 2004

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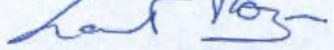
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
DATA MATRIX

Date: November 21, 2004	**EPA Reg. No.:** 66330-
ARVESTA CORPORATION 100 First Street, Suite 1700; San Francisco CA 94105	**Product:** MIDAS 50:50

Ingredient: 50% IODOMETHANE & 50% CHLOROPICRIN

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.6319	Miscibility		Arvesta Corporation	OWN	
830.6320	Corrosion Characteristics		Arvesta Corporation	OWN	
830.6321	Dielectric Breakdown Voltage		Arvesta Corporation	OWN	
830.7000	pH		Arvesta Corporation	OWN	
830.7100	Viscosity		Arvesta Corporation	OWN	
830.7300	Density/Relative Density/Bulk Density		Arvesta Corporation	OWN	
870.0000	Acute Health Effects		Arvesta Corporation	OWN	Waiver
870.1100	Acute Oral Toxicity		Arvesta Corporation	OWN	Waiver
870.1200	Acute Dermal Toxicity		Arvesta Corporation	OWN	Waiver
870.1300			Arvesta Corporation	OWN	Waiver
870.2400	Acute Eye Irritation		Arvesta Corporation	OWN	Waiver
870.2500	Acute Dermal Irritation		Arvesta Corporation	OWN	Waiver
870.2600	Skin Sensitization		Arvesta Corporation	OWN	Waiver
870.2600	Skin Sensitization		Arvesta Corporation	OWN	Waiver

Signature	Name and Title	Date
	Laurent C. Mézin; Project Manager	Dec. 03, 2004

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DATA MATRIX

Date December 03, 2004	EPA Reg No./File Symbol 66330-	Page 0 of 2
Applicant's/Registrant's Name & Address ARVESTA CORPORATION	Product MIDAS 50:50	

Ingredient

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]					
			See attached sheets		

Signature	Name and Title	Date
	Laurent C. Mézin; Project Manager	Dec. 03, 2004

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DATA MATRIX

Date: December 03, 2004	**EPA Reg. No.:** 66330-
ARVESTA CORPORATION 100 First Street, Suite 1700; San Francisco CA 94105	**Product:** MIDAS 50:50
Ingredient: 50% IODOMETHANE & 50% CHLOROPICRIN	

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
			Arvesta Corporation	OWN	
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			Arvesta Corporation	OWN	
			Arvesta Corporation	OWN	
			Arvesta Corporation	OWN	

Signature	Name and Title	Date
Laurent Mézin	Laurent C. Mézin; Project Manager	Dec. 03, 2004

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DATA MATRIX

Date: December 03, 2004	**EPA Reg. No.:** 66330-
ARVESTA CORPORATION 100 First Street, Suite 1700; San Francisco CA 94105	**Product:** MIDAS 50:50

Ingredient: 50% IODOMETHANE & 50% CHLOROPICRIN

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			Arvesta Corporation	OWN	
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			Arvesta Corporation	OWN	Waiver
			Arvesta Corporation	OWN	Waiver
Signature			Name and Title Laurent C. Mézin; Project Manager		Date Dec. 03, 2004

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Pages 182-184 Confidential Statement of Formula may be entitled to confidential treatment